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# The Milroy Lectures
ON
# THE ETIOLOGY OF ENDEMIC GOITRE.

*Delivered before the Royal College of Physicians of London on Jan. 7th, 9th, 14th, and 16th, 1913,*

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MAJOR, INDIAN MEDICAL SERVICE.

*(With Illustrative Plates.)*

## LECTURE III.[1]

*Delivered on Jan. 14th.*

MR. PRESIDENT AND GENTLEMEN,—It is my intention to-day to direct your attention to the progress which has been made towards the identification in the human body of the particular *contagium vivum* which we have now ascertained to be the immediate cause of endemic goitre. We have seen that all attempts have so far failed to identify it outside the body of man; we will now proceed to consider what evidence there is of its existence in the body of sufferers from the disease.

On the entry of the *contagium vivum* with the food into the human intestine three courses are open to it: (1) it may invade the blood and tissues, giving rise to a chronic infection; (2) it may reach the thyroid gland and exert its harmful influence in the gland itself; (3) it may remain in the intestinal tract, there producing poisonous substances which, on absorption, initiate the changes in the thyroid gland.

We shall now consider the evidence for and against these three possible modes of action of the organism, examining, in the first place, the possibility of a chronic blood infection.

### THE BLOOD IN GOITRE.

In the year 1898 Dr. Grasset published an account of a hæmatozoon, which he found in the fresh peripheral blood of sufferers from goitre of 10 to 15 days' standing. Though I have often sought, in recent cases of the disease, for the parasitic elements described by Grasset, I have consistently failed to find them. McKenzie records a like experience. None of the numerous observers who have studied the blood in goitre have recorded the presence of blood parasites. Grasset himself does not appear to have followed up his discovery with more detailed observations as to the life-history of the organism. The Swiss Goitre Commission has devoted much attention to the question of the presence of blood parasites in goitre, but always with negative results.

Nor have blood inoculation experiments yielded any positive results. In 1907 I inoculated 2 c.c. of blood taken from a young man, the subject of a recent goitre, into the flank of a young monkey. Two inoculations were made at intervals of seven days, but no results were observed. The monkey remained in perfect health.

### PARASITIC THYROIDITIS OF CHAGAS.

It is in these particulars as well as in its symptomatology that the endemic goitre which we are discussing differs from the "parasitic thyroiditis" recently described by Dr. Carlos Chagas. This disease, which is endemic in Brazil, approximates in one of its forms so very closely to endemic goitre that I would ask your permission to make a slight divergence from my main theme in order to lay before you the results of Dr. Chagas's most important work, and to point out its bearing on the subject immediately before us.

"Parasitic thyroiditis" is due to a trypanosome, the schizotrypanum cruzi, possessing peculiar features, and is conveyed from man to man by a biting insect, the *Conorrhinus megistus*. According to Brumpt, other insects also can act as hosts, especially the bed bug (*Cimex lectularius*), the excreta of which are highly infective. The malady, as the name implies, is essentially an acute condition. It is attended with pain in the thyroid gland, continued fever often high, enlargement of the lymph glands, spleen, and liver, and nervous symptoms of peculiar malignancy. Trypanosomes are readily found in the blood stream during the acute stage of the disease. The temperature remains elevated while the parasites are present in the blood. It affects young infants chiefly, and gives rise to an enormous mortality amongst them. If the disease does not terminate fatally within 15 to 30 days of its onset it lapses into a chronic form of illness, which is said to be characterised by the presence of goitre, often of very large size, and symptoms due to partial or complete loss of function of the thyroid mechanism, nervous symptoms, and affections of the heart. These symptoms are classified by Chagas, who groups them into "four forms." Patients show a peculiar colouring of the skin "different from the paleness of anæmia, and likened by Professor Austrigesilo to the appearance of pale bronze." Dependent on the degree of thyroid derangement the symptoms may be slight, of moderate intensity or very pronounced. It is possible, therefore, to meet with cases which are practically indistinguishable from the usual type of goitrous individual met with in endemic localities in Europe.

According to Chagas, these large degenerated goitres are the result of a schizotrypanum infection acquired during the early years of life. It is not possible to distinguish such cases from cases of true "endemic goitre" by blood examination, since the trypanosome, which is said to cause the goitre, disappears from the blood stream after the acute symptoms have subsided.

I find in the writings of Chagas and his helpers no reason to doubt the accuracy of many of his conclusions with regard to the acute form of the disease he has described. It is not equally clear, however, that the chronic goitres are due to the same cause which gives rise to the acute illness. Professor Kolle, of Bern, has informed me that, though he has produced some thyroid swelling in a rabbit by the injection of a culture of schizotrypanum cruzi into the artery leading to the gland, it has not been possible to induce the formation of a true goitre in this way.

Thyroid enlargements amounting to the formation of true goitre can, according to Bayon, be brought about by the injection of certain bacteria or their toxins into the gland; so that did the injection of a culture of trypanosomes give rise to a like result it could not be regarded as peculiar.

The work of Chagas is of the greatest interest, since, if it is confirmed, we shall have to recognise the existence of a form of endemic thyroiditis, due to a protozoal organism, together with the very important fact that a form of endemic goitre can be conveyed from man to man by certain biting insects.

We must not lose sight of the possibility that two forms of endemic thyroidomegaly—if I may use the term—may prevail side by side in the same district, in the same way that two different forms of splenomegaly may be found to be endemic in the same locality. Nor must we lose sight of the possibility that a trypanosome infection may coexist in the same individual with goitre initiated by the endemic influences I have indicated to you. The only criticism of Dr. Chagas's admirable work which I am at present disposed to make is that he does not appear to have excluded, in a manner which leaves no room for doubt, the possibility that the form of trypanosomiasis which he has described may be an infection superimposed upon "endemic goitre," and not, as he considers the infection to be, the veritable cause of this malady in Brazil. However this may be, there can be no doubt of the differences which exist between the "parasitic thyroiditis" endemic in Brazil and the goitre endemic in Europe and in the Himalayas. Nevertheless, Dr. Chagas's work reminds us forcibly that all cases of goitre in endemic localities need not necessarily originate from the same cause.

Returning to our consideration of

### THE HÆMATOLOGY OF ENDEMIC GOITRE,

we find that blood changes of a fairly definite character are almost always to be met with. I have made blood counts in 73 cases of goitre at all stages of the disease. I found that the polymorphonuclear leucocytes are below normal in 98·9 per cent. of cases; the small mononuclear leucocytes are above normal limits in 92·5 per cent. of cases; the eosinophile cells are above normal limits in 88 per cent. of cases, while the large mononuclear cells are increased in only 23 per cent. of cases. It was observed that these changes are most marked in recent cases.

Examination of the fæces for intestinal worms showed

[1] Lectures I. and II. were published in THE LANCET of Jan. 18th (p. 147) and 25th (p. 219), 1913.

that while often to be found, there was no evidence of their presence in the majority of the cases. The eosinophilia, therefore, cannot be accounted for in this way.

In blood taken from the thyroid gland itself by means of a hypodermic needle it was found that eosinophile cells were present in very large numbers. Twelve cases were examined in this way.

In the year 1906 I drew attention to these blood changes. Marine published similar findings in 1910, and pointed out that there was in addition a diminution of the hæmoglobin index and of the number of red blood corpuscles. The total number of leucocytes he found to be reduced in simple goitre. Miss Charlotte Millar has also found in cases of simple goitre an absolute reduction in the numbers of polymorphonuclear leucocytes down to 50 per cent. of the normal, and a hyperlymphomatosis of from 30 to 50 per cent. More recently Bauer, working in Tyrol, has also observed the increase of lymphocytes in this disease, while Lidsky and Kottman have found that the coagulability of the blood is increased.

The blood changes of exophthalmic goitre so far resemble those of endemic goitre that the polymorphonuclear cells are diminished and the mononuclear cells are increased in numbers. But by a somewhat strange antithesis, observed by Marine, the reduction of the red blood corpuscles and the increase of the eosinophile cells present in endemic goitre contrast with an increase in the former and a decrease in the latter in the exophthalmic form of goitre. These blood changes are not sufficiently characteristic as to make it possible by blood examination to distinguish, in doubtful cases, between endemic and exophthalmic goitre. In opposition to Professor Kocher, who emphasises the importance of blood examination as a differential test in early cases of Graves's disease, I am strongly of opinion that it is valueless for this purpose, and that its employment is calculated to lead to many errors of diagnosis and to the adoption of surgical methods of treatment which are not justified by the gravity of the patient's condition.

The blood changes in cases of endemic goitre give one an indication that perhaps in the intestinal tract is to be found the seat of infection, since similar changes are met with in certain intestinal infections.

Having failed, then, to find in the blood any indication of a chronic infection, we now turn to an examination of the thyroid gland itself and the changes which it undergoes in this disease.

## PATHOGENESIS OF ENDEMIC GOITRE.

By reason of the lack of material it is not possible to study in the human subject the very earliest changes which result in the development of goitre. Goitres which are removed by operation are usually the seat of extensive degenerative changes which obscure the picture of the fundamental process. Our knowledge, therefore, has been acquired by a study of uncomplicated thyroid enlargements in animals, and is largely the result of the work of such observers as Horsley, Marine, Lenhart, Bayon, and others.

Now, though the following account of the pathogenesis of goitre, which I have compiled from the writings of our best-known workers on the subject, and largely verified by my own histological studies, is, I believe, *in the main, an accurate record of the changes* which take place, yet I am myself not fully satisfied that it affords a full and satisfactory explanation of the different stages in the development of parenchymatous and colloid goitre.

According to Marine and Lenhart, the earliest changes are to be observed in the blood-vessels, the epithelium, and the stroma of the organ, and these changes vary with the degree and stage of the process. There is, in the first place, a markedly increased blood-supply to the gland. The capillaries and larger vessels of the stroma are dilated and there is an increased secretion of colloid substance which is more liquid, thinner, and takes the stains much more lightly than usual (Bayon). The next step in the process is an increase in size of the cells lining the vesicles, which may vary greatly in degree. The cells may be cubical in mild degrees to high columnar in the severer degrees of hyperplasia. They are more closely packed, more highly granular, and the nucleus is more deeply staining than is the case in the normal gland. Should these changes occur rapidly the cellular lining of the vesicle may undergo folding or plication, an appearance which is constantly observed in the severer degrees of hyperplasia, but never to the same extent in simple goitre as in exophthalmic goitre. The cells may become so high as to fill the whole lumen of the vesicle, as I myself have observed to be the case in goats in which severe degrees of hyperplasia were induced by experiment. At this stage of the process the gland may not have increased in size; and there may be little or no colloid in the vesicles, its increased fluidity possibly favouring its discharge into the lymphatics and blood stream. According to Marine, however, there is a degree of enlargement proportional to the degree of hyperplasia. Marine and Lenhart have called this "the pre-clinical stage of goitre."

Coincident with the process of parenchyma hyperplasia, hyperplastic changes take place in the connective tissue stroma. These fibrotic changes may be slight or marked, diffuse or localised.

Bayon has demonstrated that, following the glandular hyperplasia, a desquamation of the epithelial lining of the vesicles occurs. The desquamated cells coagulate and form with the colloid "casts," which, in his opinion, further irritate the epithelium to increased secretion and proliferation. The increased secretion is retained in the vesicles, and as a result of the pressure of the colloid the lining epithelium of the vesicles loses its polyhedral shape and becomes cubical or even pavement-like. The dilated vesicles lose their rounded outline and become irregular in shape. Their walls become thin and may rupture, the coalescence of adjacent dilated vesicles giving rise to cyst formations. Vestiges of previous active hyperplasia are to be found in the form of occasional projections of the wall of the dilated vesicles, which are covered with cubical or columnar epithelium according to the stage of the process, in an increase in the connective tissue stroma and in obliterating endarteritis. Marine and Lenhart describe the process as a reversion of the gland to the "colloid state," and speak of the goitres so formed as "colloid goitres," a term which is, I think, more applicable at this stage of the process than "parenchymatous goitre," and one which should not be limited to those "parenchymatous goitres in which the colloid material is unusually abundant and obvious" (Berry).

The whole process is catarrhal, and in a sense compensatory in character, and results in the formation of an increased amount of colloid substance, which is to a large extent retained in the gland. The changes appear to differ in no essential from those described by Hürthle, Horsley, Murray, and Edmunds, as taking place in the portion of thyroid left behind after partial thyroidectomy in animals—a fact to which McKenzie drew attention in 1898.

"Colloid" goitres formed in this way may be subject to recurring attacks of hyperplasia, and consequently the gland increases in size by a step-like process, which accounts for the increases observed in the size of goitres at certain seasons in goitrous localities.

Since King and Horsley demonstrated that by pressure the colloid secretion could be made to pass from the alveolus by way of the interalveolar lymphatic spaces to the lymph vessels, it has been generally accepted that this is the route which the secretion follows in its course to the blood stream. Biondi has shown that it may also find its way into the lymphatics as a result of rupture of the alveolar walls; while Hürthle has demonstrated, by the injection of Berlin blue into the lymphatic spaces, the existence of minute intercellular channels which form lines of communication between the alveolus and the interalveolar lymph spaces. If it is true that under normal circumstances the thyroid secretion is discharged into the blood stream in this way, then in the development of goitre it appears evident that some impediment must exist to the escape of the secretion by way of the lymphatics. The work of Gutknecht, Todbelsky, and Horne indicates that this is probably the case, since colloid is absent from the lymphatics in a large proportion of cases of goitre, but present in the veins of the enlarged gland. Forsyth has made the interesting suggestion that in goitre there is a retention of colloid in the gland owing to the obstruction of the main lymphatic channels by a parasitic organism, and that the secretion, finding its way blocked by the usual channel, reaches the blood stream *via* the veins—a circumstance which would account for the absence of myxœdema in most cases of goitre.

The changes which I have described as characteristic of endemic goitre occur, as a rule, uniformly over the whole

gland, but may be more apparent in some parts than in others. Amongst vesicles which have undergone the process of active hyperplasia and subsequent distension with colloid may be found others which have not been affected and which retain their normal characters.

There may also develop in the gland rounded or circumscribed masses apart from the main body of the goitre. These are usually called "simple adenoma" or "fœtal adenoma," according to their histological appearances. They may occur either in the form of a single nodule or of several nodules scattered through the gland, which, in developing, encroach on the normal tissues, causing atrophy. This adenomatous form of goitre is one which is very common in goitrous localities. It is, according to Bircher and Wilms, almost constantly met with in the artificially induced goitre of rats, in which animals a preponderating tendency to nodose hypertrophy is said to occur.

It is important to remember that degenerative processes early attack the thyroid gland which is, in the first instance, the subject of continued and increased glandular activity. The point is of the greatest importance to the physician, for it is obvious that to be successful, medicinal treatment must be commenced early, and that once degenerative processes have progressed to any extent, and have resulted in the formation of adenoma and cysts, medicinal treatment in any form must prove unavailing. In the great majority of all cases of parenchymatous goitre which come before the physician, the functional activity of the gland is impaired to some extent, and the patient exhibits symptoms corresponding in degree to the degree of impairment of glandular function.

We may sum up the changes which take place in the thyroid gland as a result of goitrous influences by saying that these influences *at first stimulate the organ to increased activity, but that the increased activity so induced is early followed by damage to the secretory epithelium, and by degenerative changes which impair its functional activity.*

### THYROID HYPERPLASIA VARIOUSLY INDUCED.

Bayon has shown that all stages of simple goitre can be produced in various ways by experiment: (1) by ligaturing the thyroid artery; (2) by the injection of an emulsion of soot in sterile water into the thyroid gland; (3) by the injection of typhoid toxins into the gland; (4) by poisoning with phosphorus. As a result of his experimental work he has concluded that "any cause which is capable of altering the function of the thyroid so as to damage its secretory epithelium can lead up to the production of colloid, diffuse, or nodular goitre." When I come to consider the experiments dealing with the transmission of goitre from man to animals, it will be shown that thyroid enlargement can be produced by feeding goats on a highly fæcal polluted water, and that very marked hyperplasias can be brought about as a result of feeding these animals with cultures of micro-organisms grown from the fæces of goitrous individuals. The many forms of "thyroiditis" are examples of goitre due to micro-organisms of the class "bacteria," while certain protozoal organisms can also cause thyroiditis. Lastly, goitre can be produced by the poisonous substances generated in the body of man and animals, either as a result of metabolic processes or by the normal bacterial inhabitants of their intestinal tract. Examples of goitre due to poisons of this nature are the goitre of pregnancy and the congenital goitre of puppies born of a partially thyroidectomised bitch.

We thus see that "goitre" can be produced in a number of ways, but chiefly by the action of micro-organisms and toxic irritants. It is highly probable, therefore, that in the case of "endemic goitre" there must exist an irritant either in the form of a micro-organism present in the gland itself or of toxic substances circulating through it.

### THE STERILITY OF GOITRE.

Many attempts have been made to find in the thyroid gland more definite evidence of the nature of the goitre-producing substance than that which is afforded by the pathological findings I have described. Since the year 1902 I have made repeated, but unsuccessful, examinations of blood obtained by thyroid puncture in recent cases of goitre.

Very careful histological examinations have been made by Hofer, Bonnet, and Pick in the case of trout goitres, but with negative results so far as the detection of a micro-organism was concerned.

Dr. Helen Chambers has examined 259 cases of innocent goitre, 30 of which were pure parenchymatous enlargements. She has recorded that—

> Several hundred sections have been made in some of the cases, and these have been treated by various methods of staining organisms in tissues. Bacteriological examination, including animal inoculation, has been made in a few cases. The result has been entirely negative. Nevertheless, the histological characters suggest a toxic substance present in the thyroid gland—in some cases diffuse, in others localised.

Professor Kolle, of the Swiss National Commission on Goitre, speaking on the work of this Commission, has stated:—

> Neither the use of the newest staining methods—for instance, Giemsa's staining of smear preparations, as well as the silver method, with sectional preparations—nor examination based on the newest principles of microscopy (dark ground illumination), has supplied us with any grounds of proof of the presence of a specific excitant in the thyroid gland that has undergone strumous degeneration, or in the blood of patients affected with goitre. If acute inflammatory processes in the goitre or general infective diseases fail to be present, the goitres, as Tavel has already stated, are completely sterile.

The Swiss Commission also carried out extensive inoculation experiments with a view to determining whether micro-organisms or other substances existed in the thyroid which could produce the disease when introduced into animals. Pieces of goitre were transplanted into the abdominal cavity of four apes. After one month the transplanted tissue was absorbed. The animals remained healthy. An emulsion of fresh goitre juice was injected intravenously into three rabbits, one dog, and one monkey. The result was *nil*, the animals remaining perfectly healthy. A similar emulsion was injected intravenously into five rabbits every week for three months. The result was negative.

Veichardt and Schittenhelm have recently demonstrated the presence of antibodies in the blood serum of rabbits inoculated with goitre-producing water. Their experiments, which promise useful results, are not yet completed.

Gelbride has examined bacteriologically the contents of eight cystic goitres. In seven the results were negative; in the eighth he obtained a culture of the streptococcus vermiformis of Sternberg. Horand also has reported the presence of a parasite in a goitrous cyst. In neither of these cases, however, is there sufficient evidence to justify the suspicion that the organisms found are causal agents in the production of goitre. The greatest care must be exercised in investigations of this kind. I, myself, have amongst my records a microphotograph of a diatom (navicula) found in the blood obtained by thyroid puncture from a case of goitre. Having regard to the fact that Klebs found naviculæ to be present in goitrigenous and absent in non-goitrigenous waters, the discovery of this organism exercised my mind greatly for some time. My repeated failure to meet with it again in the blood convinced me that the source of the diatom was the water in which my hypodermic needle had been sterilised. Nor is this the only organism I have met with, but in the other cases also I have convinced myself that their presence was accidental.

We see, then, that up to the present time there is no evidence of the existence in the thyroid gland of goitrous individuals of any specific *contagium vivum*—whether microscopic or ultra-microscopic—to which the malady could be attributed. We are led to consider, therefore, whether the increased glandular activity, and the changes which follow it, may not be due rather to some toxic substance circulating in the blood stream and emanating from an organism resident in the intestinal tract.

It is impossible to prosecute the inquiry without some appreciation of the proper functions of the thyroid gland.

### THE FUNCTION OF THE THYROID GLAND.

The fact that the antitoxic and bactericidal resources of the body are largely dependent on the functional perfection of the thyroparathyroid mechanism is, I believe, as clearly established as is the influence of this mechanism on metabolism. I desire now to draw your attention to a few proofs of the thyroid gland's antitoxic action.

Sajous showed in 1902 that the injection of various bacterial toxins into man and the lower animals excited, more or less actively, according to their virulence, the thyroid gland's functional activity, while Bayon's researches show that the injection of bacterial toxins into the gland may lead to the actual formation of goitre. Farrant also has lately induced marked thyroid hyperplasia by the injection of diphtheria toxin into guinea-pigs; he demonstrated

that the hyperplasia so induced could be controlled and greatly mitigated by the administration of thyroid extract at the same time as the toxin. Fassin found that the germicidal power of the blood was diminished by thyroidectomy. Charrin, Vincent, and Jolly drew attention to the fact that animals deprived of their thyroid glands are rendered very susceptible to infectious diseases, to which they readily succumb. Hürthle observed that by ligaturing the bile-ducts in dogs the thyroid secretion was increased; he attributed this change to the passage of certain constituents of the bile into the blood. Although this is doubtless possible, it may with equal reason be assumed that the operation, by depriving the intestinal contents of the biliary secretion, hastens putrefactive processes, and thereby fosters the absorption of an excess of toxic substances into the blood stream from the intestine. Turrò has found that the juices of swine's and sheep's thyroids dissolved almost entirely the comma, typhoid, and anthrax bacilli, as well as the bacillus coli communis and streptococcus. Gley showed that the blood serum of thyroidectomised dogs is more toxic than normal serum and gives rise to convulsions when injected into animals, while de Luca and d'Angerio have found that the urine of these animals contains a higher percentage of toxic substances than is normal, and that thyroid extract administered to them counteracted this toxicity.

While making every allowance for errors of observation, these and other findings of a like nature justify the belief that the thyroid gland contributes largely to the body's antitoxic and bactericidal resources.

In some animals low in the phylogenetic scale—amphioxus, ascidians, and lower vertebrata—the thyroid gland communicates with the pharynx by means of a duct. In fishes also this is the case, so that in these animals the thyroid secretion enters the body by way of the alimentary tract. It may be, as has been suggested by Andriezen, that the thyroid secretion is absorbed in fishes through the vascular arches, and enables the respiratory organs to take up oxygen and carry on the gaseous metabolism more readily. But, in view of the secretion's antitoxic and bactericidal action, its discharge into the pharyngeal cavity is, to my mind, an indication that it is intended to exercise this action in the alimentary tract. We have seen that trout develop goitre when confined in filthy, unhygienic tanks which are swarming with micro-organisms. It is highly probable that under these circumstances the thyroid gland is stimulated to increased activity, and that in consequence there is, at first, an increased discharge of colloid into the alimentary tract. But the reaction of the gland is early followed by an imprisonment of colloid in the organ, and other degenerative changes occur, which result in the formation of visible goitres.

These facts suggested to my mind the possibility that the *contagium vivum* of goitre might exist in the intestinal tract, a possibility to which the results of blood counts also pointed. Blum, in 1900, expressed the belief that goitre was due to the presence of a living excitant in this situation, but he advanced little proof in support of his contention. Let us now examine the evidence which, I believe, demonstrates the truth of this view.

### INTESTINAL ANTISEPTICS IN THE TREATMENT OF GOITRE.

Acting on the assumption that the intestinal tract might be the seat of infection, I began in the year 1905 to try the effect of intestinal antiseptics in selected cases of the disease. My first case was that of a man suffering from a fairly large parenchymatous goitre. The man was admitted into hospital and salol prescribed. No result was observed during the first ten days. I then left Gilgit, and on my return, six weeks later, I found a very notable change had taken place in this case during my absence. Not only had the goitre almost completely disappeared, but there was a striking change in the man's general appearance. He was considerably thinner and the skin had lost its muddy look and become much clearer. Thinking that residence in hospital, and the comparative freedom from goitrous influences which is thereby entailed, had been in part responsible for the change, I commenced treating selected cases as external patients. All these patients continued to live under the same conditions of life as those under which the disease had been acquired; I further selected thymol as likely to prove a more efficient intestinal antiseptic than salol (*vide* Figs. 9 and 10).

I have treated well over 100 cases of goitre in this way, but in 82 only was I able to observe the final result of the treatment. Of these 82, 68 were cured, or so markedly benefited as to be practically so; while 14 were unaltered, or only benefited to a very slight degree. All were selected cases. Thirty-three were of three months' standing or less, 25 were of 12 months' standing or less, while 24 were of a year's standing or more. The great majority of these cases which could be regarded as cured or very greatly benefited were of less than one year's standing. A few were of longer duration. These were uniform parenchymatous enlargements, some of them showing marked pulsation and engorgement of the vessels of the neck. The majority of such cases react at once to treatment by thymol, and in some the swelling disappears with great rapidity. One meets with a few cases, however, which, though they appear to differ in no essential from others, are quite uninfluenced by the treatment, or indeed by any other medicinal treatment employed. Older cases respond less readily to treatment, but in some of these also the results are quite surprising. Cases in which there are changes in the gland of a permanent character are either not influenced by the treatment, or a certain shrinking of the gland around the cyst or tumour mass takes place, rendering them more clearly defined. This treatment, like all others of a medicinal nature, is applicable only to cases of recent origin where degenerative, cystic, and adenomatous changes have not yet taken place. Where such changes have occurred no form of medicinal treatment is of the slightest use.

When thymol is prescribed in such large doses as 10 gr. twice daily the patient's dietary should, of course, contain no solvents of the drug; otherwise most unpleasant symptoms of thymol poisoning may result. When this rule is observed no ill effects follow its use, even when administered for such long periods as three months. Apart from a few complaints of burning pain around the anus, none of my patients have been in the least inconvenienced by the treatment. The drug is best administered in the form of a coarse powder washed down by a draught of water. The bowels should be active, and if there is any tendency to constipation an occasional purge should be given.

A striking result of this treatment, and one which is noticeable in most of the photographs I have shown, is the loss of subcutaneous fat which occurs. The patient becomes more clean-limbed and the skin assumes a healthier tint. β naphthol, also, acts beneficially, though I have not given it the same extended trial as thymol.

The chief interest which attaches to the treatment of goitre by thymol is etiological rather than therapeutical. The germicidal power of thymol is very great. Ratimoff placed it fourth in the list of germicides, arranged according to potency (mercuric chloride, silver nitrate, iodine, and thymol). It is interesting to note that it is only slightly

### DESCRIPTION OF ILLUSTRATIONS IN SUPPLEMENT.

FIG. 6.—Shows appearance of neck at the time the experiment was commenced. Measurement, 33 cm. The experiments which are illustrated in Figs. 6, 7, and 8 are described in THE LANCET of Jan. 25th, p. 224.

FIG. 7.—The same subject. Photograph taken on the thirtieth day of the experiment. Measurement, 35 cm.

FIG. 8.—The first line represents the appearance of the normal thyroid gland of a white rat. The second shows the result of feeding rats on non-goitre-producing water. The third the result of feeding rats on goitre-producing water. The fourth the result of feeding rats on a goitre-producing water passed through Jura earth and through a Berkefeld filter. The fifth shows goitres produced in rats by the residue left on the membrane of the dialyser and by the residue left on the candle of a Berkefeld filter after the passage of goitre-producing water. (By permission of Dr. E. Bircher.)

FIG. 9.—Case 62. Appearance of patient's neck prior to the commencement of treatment by thymol. Measurement, 41½ cm.

FIG. 10.—The same case eighteen days after the commencement of treatment. Measurement, 38 cm.

FIG. 11.—Goitre in a boy, aged 12, treated by "soured milk."

FIG. 12.—The same case after thirty days' "soured milk" treatment. Note complete disappearance of goitre and great loss of subcutaneous fat.

FIG. 13.—Shows the changes brought about in the size of the thyroid gland of rats as a result of giving them goitrigenous water for a period of nine months. The first line shows the thyroid apparatus of normal rats as seen from behind; the second, the experimentally produced goitres; whilst the third line shows the enlargement which resulted from the consumption of water raised to a temperature of 99° to 100° C. for several minutes. (See issue of Jan. 18th, p. 154.)

FIG. 14.—Parenchymatous goitre treated with "coli" vaccine. Before, 42 cm.

FIG. 15.—Parenchymatous goitre treated with "coli" vaccine. After, 37·5 cm.

less powerful than that "specific" for goitre—iodine—in its germicidal action.

Cooper, in his recent researches on the bactericidal action of the cresols and allied bodies, states that in the absence of particulate organic matter thymol is 25 times as powerful a disinfectant as phenol, and 10 times as powerful as the cresols to bacillus typhosus. He also showed that emulsified thymol is 23 times as powerful as phenol in the absence of particulate organic matter, and 7½ times as powerful in the presence of 3 per cent. of dried fæces. So that it is a very powerful germicide indeed.

Now thymol is not readily soluble in water (1 in 1500), so that in the absence of any of its solvents, such as fats, oils, alcohol, and vinegar, it is very sparingly absorbed into the system when administered in the form of a coarse powder. Its action is, therefore, in all probability a local one in the gut. I regard the action of the drug as very strong, though not conclusive evidence that the habitat in man of the organism responsible for the production of goitre is the intestinal tract. The drug appears to act either by destroying the living excitant of goitre, or by reducing its numbers or activity in such a way that the production of toxic substances is lessened, and the thyroid gland is relieved of the excessive demand for its secretion which necessitated the hypertrophy.

It is well known that iodine is regarded as a specific for goitre. I believe that its beneficial action is largely due to its powerful germicidal properties, which are even more marked than those of thymol. It acts possibly also by supplying to the thyroid that ingredient on which the antitoxic activity of its secretion depends. The internal administration of iodine also leads to leucocytosis, a very desirable object to attain where there is usually a marked reduction of the polynuclear cells of the blood. Its use is attended with a loss of weight and subcutaneous fat, and if the treatment is carried to excess dangerous wasting and palpitation of the heart and other symptoms may arise.

### LACTIC ACID BACILLUS IN THE TREATMENT OF GOITRE.

The action exercised by the lactic acid ferments when applied to the treatment of recent cases of goitre affords additional evidence that the agent responsible for the production of goitre has its habitat in the intestinal tract of man. In carrying out this line of treatment I have used the fresh cultures in milk of the bacillus bulgaricus. I have treated up to the present time only eight cases in this way, but the results have been very striking. My patients were under treatment for a period of one month to six weeks. To some 12 to 20 oz. of "soured milk" were given every morning before the first meal of the day, to others 10 oz. were given in the morning and 10 oz. in the evening. The cases were all of several months' standing, and during treatment there was no change whatever in the manner of life of the patients. They were treated as external cases, and carried out their work in the fields as usual. The results cannot be attributed, therefore, to change of locality, habits of life, or water-supply. Of these eight cases, four were cured, two improved, and two showed no appreciable difference after six weeks. In those cases which were benefited by the treatment it was observed that the thyroid gland began to show evidence of diminution in size about the tenth day of treatment, and that the patients lost flesh. (Figs. 11 and 12.) The latter fact is of great interest, inasmuch as it is observed to occur also as a result of the treatment of goitre by means of iodine and thymol.

### VACCINES IN THE TREATMENT OF GOITRE.

The next step in my investigations was the employment, in the treatment of the disease, of vaccines prepared from bacteria found in the fæces of sufferers from goitre. A full account of the preparation and use of these vaccines will be found in a paper published in THE LANCET of Feb. 10th, 1912, p. 357. Three vaccines were so employed. The first, a composite vaccine made from such organisms as grew on Musgrave's agar; the second, a "coli" vaccine made from the patient's own strain of bacillus coli; the third, a vaccine prepared from a spore-bearing organism which was isolated from the fæces of a goitrous pony. The results obtained by the use of these vaccines were very remarkable, and a complete disappearance of the thyroid swelling took place in all those cases where there were no degenerative changes in the gland. Figs. 14, 15, and 16 show the results of treatment with "coli" vaccine in a man aged 23.

Vaccines prepared from organisms derived from sources other than the patient's own fæces were then employed, and equally striking results were obtained with a staphylococcus vaccine—the staphylococcus having been derived from a case of caries of bone. Considerable interest attaches to the fact that a staphylococcus vaccine exercises such a remarkable influence on the enlarged thyroid gland, since the organism is also a normal inhabitant of the intestinal tract of man. The significance of these results is discussed in the paper above referred to.

The vaccine treatment of goitre is further confirmation of the view which I have enunciated that goitre is due to the presence of a living organism of disease in the intestinal tract. It demonstrates also that the thyroid gland is markedly influenced by the nature of the bacterial flora of the gut, and that one of its chief functions is to protect the body from the many toxic substances which find their way into the blood stream from the alimentary canal. The remarks which I have made with regard to the treatment of

FIG. 16.

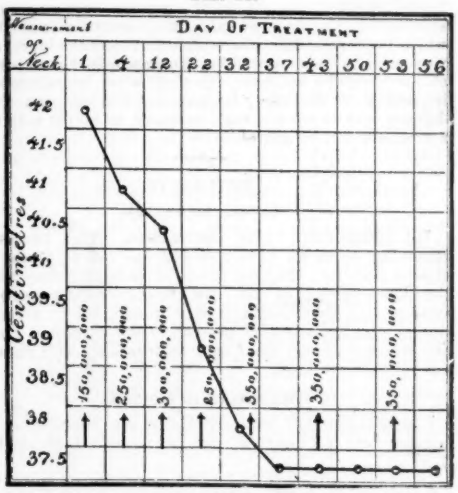



Chart showing measurements of neck at various stages of treatment with doses and times of administration of vaccine.

goitre by thymol apply also to its treatment by means of vaccines. The method is of use only in fairly recent cases of the disease in which degenerative processes have not yet involved the gland to any extent.

A conspicuous feature of this treatment, and one which brings it into line with the treatment by iodine, intestinal antiseptics, and the bacillus bulgaricus, is the fact that the patients lose flesh and the skin becomes of a healthier tint. The common factor in all these methods of cure is to my mind the fact that they destroy or inhibit the action of the toxic agent of the disease. Iodine, thymol, and B. bulgaricus do so by their antisepticising action in the gut, while the vaccines employed attain the same end by a more complicated process of immunisation. Cases in which these various therapeutical measures may be employed with success are those which also respond to treatment by thyroid extract, showing that the goitre is a response to a demand for thyroid secretion which, when supplied artificially, enables the hypertrophied organ to subside. Iodine, thymol, and vaccines destroy or inhibit the action of the agent which institutes the demand, but since they do so comparatively rapidly, and while the organ is still enlarged, the secretion which is stored up in the dilated vesicles is for a time in excess, the demand for it having been removed. The excess of secretion, therefore, which continues to reach the blood stream, until such time as the gland regains its normal equilibrium, exerts its influence in increasing the metabolic processes of the body, and a loss of subcutaneous fat is the result.

Let me now briefly recapitulate the evidence in favour of the intestinal tract as the seat of infection in goitre. The toxic agent of the disease reaches this situation through the medium of water or food, a situation into which the secretion

of the thyroid gland is known to be thrown in certain of the lower animals. This secretion possesses, to a high degree, bactericidal and antitoxic powers. A powerful antiseptic which exerts its action in the gut cures the disease, as does the lactic acid bacillus, which acts by inhibiting the production by the intestinal flora of poisonous indols and phenols. Lastly, vaccines, prepared from organisms which are known to be normal inhabitants of the bowel, cause the disappearance of goitre. It is my belief that short of the actual identification of the toxic agent of the disease, stronger evidence of the truth of my contentions could hardly be conceived.

It has been objected that intestinal toxæmia is nowadays made to account for many disorders for which no better explanation can be found. This may be so, but I hope that those who have listened to my argument will agree with me that the evidence before us removes this view of the causation of goitre from the region of doubtful hypothesis to that of practical certainty. It is true that nature has provided a sentinel in the liver, standing at the exit of the portal system, to deal with the poisons which are produced in the intestinal tract, but nature has provided also an additional safeguard in the shape of an antitoxic secretion in the blood, which encounters the poisons absorbed from the bowel at the very point of their absorption. To emphasise the importance of the thyroid's antitoxic function is not to minimise the importance of the liver; both are units in the great army of defence, and to put one such unit out of action is to throw a greater strain on another.

## LECTURE IV.

*Delivered on Jan. 16th.*

MR. PRESIDENT AND GENTLEMEN,—The process of reasoning which we have followed has led us to the conclusion that the *contagium vivum* of endemic goitre inhabits the intestinal tract of man; but the culminating test of the truth of this conclusion can only be afforded by a recognition of this organism as present in the intestinal content and its transmission from man to animals. This point has not yet been attained.

### THE FÆCES IN GOITRE.

I have examined microscopically the fæces of a large number both of goitrous and of normal individuals in Gilgit.

In a paper published in 1909[2] I have figured and given a brief description of the varieties of amœbæ met with. In 103 cases of goitre in which the fæces were examined I found amœbæ present in 87. In 48 cases they were found in large numbers, in 27 in moderate numbers, and in 12 only after considerable time had been spent in searching for them. The fæces of 101 non-goitrous individuals, living in the same locality, were also examined. In 29 of these amœbæ were present; the infection was plentiful in 8, moderate in 9, and scanty in 12. The eight-nucleated cysts, which are typical of one of the varieties of amœbæ met with, were found also in samples of fæces sent to me by Colonel Macnab, I.M.S., from cases of the disease which occurred in the boys' school at Simla. *While no definite statement can be made as to the pathogenicity of these amœbæ*, their *possible* importance is obvious when it is remembered that goitre is due to an organism carried by water.

I must take this opportunity to point out clearly that I do not assert, and have never asserted, as is sometimes stated by continental writers, that goitre is due to the presence in the intestines of the amœbæ I have described. My study of these organisms was but the beginning of an investigation of the protozoa parasitic in the intestines of residents in localities where goitre is endemic—an investigation which I regard as of primal importance.

Various experimental procedures have been adopted by the Swiss Goitre Commission with a view to demonstrating the presence of a specific virus in the fæces: 1. Intravenous injections of a filtered solution of *normal fæces* have been made into rabbits. The operation was repeated seven times in one case, but with negative results. 2. Intravenous injections of a filtered solution of *goitrous fæces* have been made into rabbits. The operation was repeated eight times. The thyroid did not enlarge. 3. Intravenous injections of a solution of normal fæces in chloroform and of goitrous fæces in chloroform have also given negative results.

There still remains, therefore, much work to be done; and it is my hope, should the circumstances of my service permit, to continue the prosecution of research in this direction.

### EXPERIMENTS DEALING WITH THE TRANSMISSION OF GOITRE FROM MAN TO ANIMALS.

Since the year 1906 I have repeatedly endeavoured to transmit goitre from man to animals by infecting the water-supply of the latter with the fæces of sufferers. No effects being observable in dogs, I undertook a series of experiments on goats in the hopes of arriving at results of a positive character.

Female goats were selected for these experiments. They were taken from the same flock, were between the ages of one and two years, and were not pregnant. This point is of importance, since the increased activity of the thyroid gland during pregnancy would vitiate the results observed on microscopical examination of the organ. The goats were brought from a non-goitrous locality, high up in the mountains, about 40 miles distant from Gilgit. Their thyroids were carefully examined and were found to show no signs of hypertrophy. In the majority either the gland could not be distinguished from the surrounding tissues or could be felt only with the greatest difficulty. Where the organ was palpable it was found to be oval in shape and about the size of a small almond. The goats were divided into batches, which will be referred to as I., controls (3 goats); II., Batch X (6 goats); III., Batch Y (7 goats). Each batch was confined in a separate pen. The animals were all fed on leaves and young branches of trees, in order to exclude as far as possible sources of contamination from the soil. The experiment was designed so as to foul the drinking water of Batches X and Y, while that of the controls remained pure.

The apparatus which I devised for this purpose is represented by the figure (Fig. 17). It consisted of a drum, A, which was fitted with a tap. A covered wooden box, B, having a perforated false bottom of wire gauze under which was a wooden trough sloping towards an outlet pipe, B. This outlet pipe led into a flask C, which was fitted with a perforated cork, so as to ensure freedom from contamination by soil, dust, &c. The drum, A, was filled with a non-goitre-producing water which had been previously boiled. A trickle of water from the drum, A, was allowed to pass continuously into the box, B. This box was partially filled with soil taken from the most goitrous village in Gilgit. The soil was sterilised by steam at 230° F. for 30 minutes, and was then mixed with the fæces of sufferers from incipient goitre. Fresh fæces were added to the mixture several times a week during the course of the experiment. The water from the drum, A, trickled into the box, B, saturated the mixture of sterilised earth and fæces, and, passing through the perforated bottom of the box, found its way, by means of the wooden trough and outlet pipe, B, into the corked flask, C. This was the only drinking-water provided for the goats of Batches X and Y.

A separate apparatus was used for each batch. In the case of Batch Y, however, 500 earthworms were introduced into the box, B. The earthworms were added with a view to determining whether they might act as intermediate hosts for the organism suspected of causing the disease. The water-supply of both batches was, therefore, grossly contaminated with the fæces of sufferers from goitre, while in the case of Batch Y the drinking-water contained such additional matter as was derived from the excreta of the earthworms.

The experiment was commenced on Oct. 13th, 1910, and terminated on Dec. 15th, 1910. The thyroid glands of the controls showed no change during the 64 days of the experiment. In the case of the goats of Batches X and Y, however, it was observed that (1) all the animals lost in weight; (2) many of them suffered from diarrhœa; (3) 50 per cent. of the goats in each batch showed enlargement of the thyroid gland.

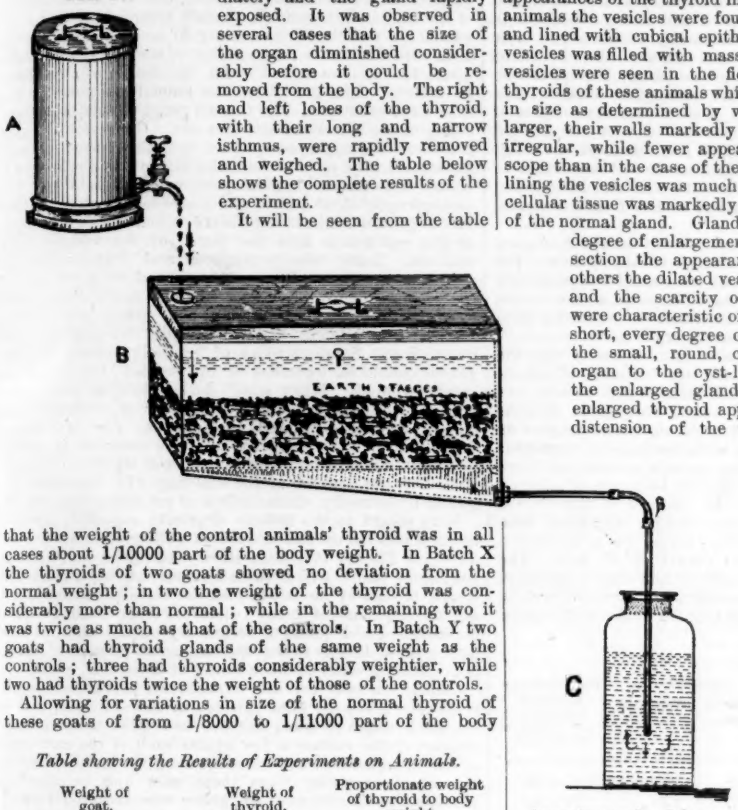
It was observed that the thyroid glands of two of the goats in Batch X showed signs of enlargements, as determined by palpation, as early as the thirteenth day of the experiment. A second noticeable feature was the manner in which the glands fluctuated in size. It will be

[2] Quarterly Journal of Microscopical Science, 1909.

remembered that goitre in man, whether artificially produced or naturally acquired, shows the same tendency to fluctuate in size in its early stages. This is due, I believe, to the alternate emptying and distension of the vesicles with colloid.

The animals were killed by a goorkha, skilled in severing the head from the body at one stroke of his kookrie (knife). The neck was dissected immediately and the gland rapidly exposed. It was observed in several cases that the size of the organ diminished considerably before it could be removed from the body. The right and left lobes of the thyroid, with their long and narrow isthmus, were rapidly removed and weighed. The table below shows the complete results of the experiment.

FIG. 17.




Apparatus employed for contaminating the water.

It will be seen from the table that the weight of the control animals' thyroid was in all cases about 1/10000 part of the body weight. In Batch X the thyroids of two goats showed no deviation from the normal weight; in two the weight of the thyroid was considerably more than normal; while in the remaining two it was twice as much as that of the controls. In Batch Y two goats had thyroid glands of the same weight as the controls; three had thyroids considerably weightier, while two had thyroids twice the weight of those of the controls.

Allowing for variations in size of the normal thyroid of these goats of from 1/8000 to 1/11000 part of the body weight, it will be admitted that about 50 per cent. of the animals in Batches X and Y showed enlargements of the thyroid gland. It is possible that conclusions based on the weight of such a variable organ as the thyroid gland may prove fallacious, but as the goats were taken from the same flock and were of the same season and sex the margin of error was reduced to the minimum. Since the same results were observed in the goats of Batches X and Y, earthworms would not appear to be concerned in the spread of the disease.

*Table showing the Results of Experiments on Animals.*

| Weight of goat. | Weight of thyroid. | Proportionate weight of thyroid to body weight. |
|---|---|---|
| *I.—Controls—three in number—which Consumed only Pure Water.* | | |
| (1) 60 lb. | 3·2 grm. | 1/10000 |
| (2) 43 ,, | 2·05 ,, | 1/10439 |
| (3) 65 ,, | 3·2 ,, | 1/10100 |
| *II.—Batch X—six in number—which Consumed only Fæcally Contaminated Water.* | | |
| (1) 48½ lb. | 3·6 grm. | 1/6654 |
| (2) 26½ ,, | 2·93 ,, | 1/4500 |
| (3) 38 ,, | 2·3 ,, | 1/8000 |
| (4) 30 ,, | 1·5 ,, | 1/10000 |
| (5) 22½ ,, | 2·32 ,, | 1/4800 |
| (6) 29 ,, | 1·35 ,, | 1/10700 |
| *III.—Batch Y—seven in number—which Consumed Fæcally Contaminated Water, as in the Case of Batch X, together with the Excrementitious Products of Earthworms.* | | |
| (1) 50½ lb. | 4·0 grm. | 1/7000 |
| (2) 41½ ,, | 4·3 ,, | 1/4850 |
| (3) 56 ,, | 3·7 ,, | 1/7530 |
| (4) 55½ ,, | 3·6 ,, | 1/7700 |
| (5) 49½ ,, | 5·4 ,, | 1/4272 |
| (6) 45 ,, | 1·9 ,, | 1/11700 |
| (7) 39 ,, | 1·9 ,, | 1/10000 |

Marked differences were observed in the microscopical appearances of the thyroid in these animals. In the control animals the vesicles were found to be small, round, compact, and lined with cubical epithelium. The space between the vesicles was filled with masses of rounded cells, and many vesicles were seen in the field of the microscope. In the thyroids of these animals which showed the greatest increase in size as determined by weight, the vesicles were much larger, their walls markedly thinner, and their outline more irregular, while fewer appeared in the field of the microscope than in the case of the normal gland. The epithelium lining the vesicles was much flattened, and the intravesicular cellular tissue was markedly less in amount than in the case of the normal gland. Glands which showed an intermediate degree of enlargement presented in some parts of the section the appearances of normal tissue, while in others the dilated vesicles, flattened epithelial lining, and the scarcity of intravesicular cellular tissue were characteristic of the more enlarged organs. In short, every degree of variation was met with, from the small, round, compact vesicle of the normal organ to the cyst-like dilatation of the vesicle of the enlarged gland. The increase in size of the enlarged thyroid appeared to be due wholly to the distension of the vesicles with colloid material. Photomicrographs show these points of distinction clearly.

For the purpose of comparison I now show you a photomicrograph of a large external trout goitre, which is taken from a paper by Marine and Lenhart. The large dilated vesicles filled with colloid and the thinning of the vesicle walls are well seen.

This experiment proves that an enlargement of the thyroid gland of goats can be induced by infecting the water-supply with the fæces of sufferers from goitre. It does not amount to proof that the enlargement so induced is due to the action of a specific living excitant of goitre; it might be due only to the organic impurity of the water.

In 1911 I repeated this experiment. Twelve female goats, aged 2 years, were employed. In this case the animals were much better fed, their ration consisting of 1 lb. of grain and as much lucerne grass as they could eat. The experiment was continued for 107 days. At the end of this time seven of the animals were taken at random and killed in the manner I have described. The accompanying table shows the weights of the thyroid glands as compared with the body weight of the animals:—

| No. | Weight of animal. | Weight of thyroid. | Proportionate weight of thyroid to weight of animal. |
|---|---|---|---|
| I. | 42 lb. | 2·8 grm. | 1 : 7,466 |
| II. | 42 ,, | 3·0 ,, | 1 : 6,999 |
| III. | 38 ,, | 1·3 ,, | 1 : 14,600 |
| IV. | 55 ,, | 3·1 ,, | 1 : 8,800 |
| V. | 45 ,, | 2·5 ,, | 1 : 9,000 |
| VI. | 46 ,, | 1·4 ,, | 1 : 16,400 |
| VII. | 28 ,, | 1·7 ,, | 1 : 8,000 |

In three of these animals the thyroid gland was considerably larger than normal. The increase in size, however, was

not so marked as in the first experiment, a difference which may be attributed to the fact that the animals in the experiment were better fed and gained in weight, whereas those in the first experiment had *lost* in weight. Two animals had thyroid glands below the normal weight, while two showed no marked deviation from the normal size. The histological appearances of the glands of these animals varied very considerably. I shall indicate only the appearances observed in the case of those glands which were above the normal weight (Nos. 1, 2, and 7). Nos. 1 and 2 were identical in appearance. The vesicles were on the whole larger, more irregular in shape, and the total amount of colloid was greater than in the case of the normal gland. The epithelium lining the vesicles was somewhat higher than normal. The thyroid in these cases did not present the same degree of dilatation and irregularity of the vesicles, nor the marked flattening of the epithelium, which was observed as a result of the first experiment. Indeed, apart from the increase in size of the organs, it cannot be said that the histological appearances differed in any marked extent from the normal gland.

The histological appearances of the thyroid gland of goat No. 7 revealed a considerable degree of hyperplasia. The vesicles were small, the amount of colloid comparatively scanty, the lining epithelium was columnar, and the vessels of the gland were dilated. The gland was markedly more cellular than any other in the present experiment.

Experiments on goats were also carried out to test the effect of feeding these animals on cultures of micro-organisms grown from the fæces of goitrous individuals.

Four female goats, aged 2 years, were gives 48-hour cultures on Musgrave's agar of such organisms as grew on this medium after inoculation with the fæces of a goitrous individual. An emulsion of the bacteria present was introduced into the stomach of the animals by means of a funnel every other day for 61 days. At the end of this time a similar emulsion of a spore-bearing bacillus, which had been isolated from the fæces of a goitrous horse, was administered on alternate days for a further period of 47 days. The animals were then killed and their thyroid glands examined microscopically. The accompanying table shows the weight of the thyroid gland in each case relative to the body-weight of the animal:—

| No. | Weight of animal on Jan. 20th. | Weight on May 7th. | Increase in weight. | Weight of thyroid. | Proportionate weight of thyroid to body-weight of the animal. |
|---|---|---|---|---|---|
| I. | 42 lb. | 54 lb. | 12 lb. | 1·0 grm. | 1 : 27,000 |
| II. | 48 ,, | 65 ,, | 17 ,, | 2·3 ,, | 1 : 13,000 |
| III. | 37 ,, | 40 ,, | 3 ,, | 2·0 ,, | 1 : 10,000 |
| IV. | 32 ,, | 41 ,, | 9 ,, | 1·6 ,, | 1 : 12,000 |

It will be observed from the table that:—1. All the animals increased in weight. In No. 2 the increase was very marked. In No. 3, in which the thyroid was of normal weight, the animal increased only 3 lb. in weight. 2. In three cases out of four the thyroid gland was smaller than normal; in No. 1 very markedly so. There was, therefore, in these animals no evidence of any enlargement of the thyroid gland (goitre). But well marked histological changes were observed in all animals in which the thyroid showed considerable deviation from the normal weight. I shall refer only to two of these:—

In No. 1 the vesicles were round or oval, lined with cubical or low columnar epithelium; the colloid was small in amount; a large area of parathyroid-like tissue formed about one-half of the total sectional area of the gland. This area was wholly cellular and showed an absence of colloid. The capillaries and vessels of the stroma were dilated; there was some increase of the connective tissue stroma of the organ, especially around the blood-vessels, the walls of which appeared somewhat thickened.

In No. 2 formed vesicles were almost wholly absent, or were filled with round, imperfectly-staining cells and cellular débris; where vesicles were seen they were lined with irregular, high columnar epithelium, the lining being often incomplete in parts. Stainable colloid, with the exception of a few densely stained particles, was almost wholly absent. The stroma was increased markedly in amount, and formed a network, the meshes of which were filled with round cells and cellular débris. The capillaries of the organ were not noticeably altered. The appearance of the gland, together with the greatly increased weight of the animal (17 lb.) were suggestive of a commencing myxœdema.

The peculiar histological features of these cases find a parallel in some cases of rat goitre, due to the consumption of the Aarau water residue, recently recorded by E. Bircher, which are sufficiently interesting to merit detailed description. One of these cases is that of a young rat which was given the residue mixed with its food for a period of 12 months. The growth of the animal was considered to have been backward. The thyroid gland showed a moderate enlargement about the size of a pea. On section the gland presented the appearance of an irregular frayed network. Microscopically, normal follicular tissue was nowhere to be seen. The nodose hypertrophy, which is said to be so characteristic of rat goitre, was conspicuously absent. There was a pronounced cellular disintegration and desquamation of the epithelium into the lumen of the vesicles. The epithelial lining was incomplete and frayed; the cell nuclei were altered in appearance and in their staining characters. The vesicles were irregular and communicated one with another, forming irregular spaces. The blood-vessels were dilated, and perivesicular hæmorrhages had taken place. Small particles of intensely staining hæmatogenous colloid were present in the vesicles; the colloid was not vacuolated. Many small darkly-staining nuclei were present. The whole presented a picture of a confused cell chaos. Bircher diagnosed the case as one of "struma degenerativa." Similar changes were observed in goitres produced in rats by means of the material separated from the water by the septum of the dialyser. In these also the nodose hypertrophy, characteristic of rat goitre, was absent.

With regard to the defects of growth especially observed in those rats fed on the residue of goitrigenous waters, and on which Bircher lays such stress—having myself seen the conditions under which these animals are kept, conditions which, though by no means bad, are certainly favourable to the development of many diseases other than goitre or cretinism—I feel bound to record my opinion that, in attributing these defects to the specific agent of goitre, Bircher is overlooking other common causes of defective growth.

Coincident with my last experiment, four other female goats were given the same cultures in the same way and for the same length of time, but one hour prior to the administration of the culture a few grains each of the carbonates of lime, magnesium, and sodium were given to the animals. My object in giving them these salts was to ascertain whether the development of goitre was favoured thereby. Three of the four goats were killed at the end of 108 days. The following table shows in each case the weight of the thyroid relative to the body-weight of the animal.

| No. | Weight of animal on Jan. 20th. | Weight of animal on May 7th. | Increase in weight. | Weight of thyroid. | Proportionate weight of thyroid to body-weight of the animal. |
|---|---|---|---|---|---|
| I. | 44½ lb. | 55 lb. | 10½ lb. | 1·5 grm. | 1 : 18,200 |
| II. | 41 ,, | 55 ,, | 14 ,, | 1·45 ,, | 1 : 16,000 |
| III. | 37½ ,, | 45 ,, | 7½ ,, | 2·1 ,, | 1 : 10,630 |

No. 1 showed on microscopical examination a slight increase in the connective tissue stroma; scanty, darkly staining colloid; vesicles, round or oval, and either filled with cells or lined with a high columnar epithelium. The vessels were dilated. The changes indicated a well-marked hyperplasia. No. 3 was normal in appearance.

In No. 2 the histological appearances were the same, but in this case the vesicles were larger and the cells lining them of a lower columnar type, while the colloid was rather more plentiful. The addition of alkalies in this experiment did not appear to influence the result to any extent.

In short, of 7 animals fed on bacterial cultures, 5 not only failed to exhibit any enlargement of the thyroid gland, but were found to show an actual diminution in the size of the

organ. On the other hand, 4 of these 5 glands showed a marked hyperplasia.

Four other goats were given the salts of lime, magnesium, and soda for the same period of time as in the previous experiment. Two of these animals were killed. The thyroid glands were of about normal size. One of these on microscopical examination showed also some signs of hyperplasia.

These experiments may be summed up as follows. In animals which drank only water highly polluted by fæces for periods up to 108 days there was a tendency on the part of the thyroid to be larger than normal, and to exhibit on microscopical examination an increase in size of the vesicles, irregularity and thinning of their walls, and distension of the vesicles with colloid; in animals which were fed on cultures of bacteria for the same length of time there was a tendency on the part of the thyroid gland to be smaller than normal, while the histological appearances of the organ were those of an active hyperplasia, often very pronounced. I think it possible that future investigations will show that this apparent difference of result is nothing more than a different stage in the process of development of goitre.

Of the experiments with bacterial cultures the two most striking results are the marked hyperplasia and the accompanying diminution in size of the gland. This hyperplasia is in conformity with that produced by Sajous, Bayon, and more recently Farrant, as a result of the injection into animals of bacterial toxins; the diminution in size has been noted by other experimenters. Edmunds found in one of his dogs in which partial thyroidectomy had been performed that the remaining lobe, though it showed marked hyperplasia on microscopical examination, was macroscopically smaller than normal. Farrant also has concluded that the earliest stages of hyperplasia are associated with a diminution in size rather than an increase.

It remains only briefly to contrast these results with the histological changes apparent in the goitres artificially produced by Bircher and the Swiss Goitre Commission. Bircher was good enough to give me an opportunity of examining his specimens in his laboratory at Aarau. Undoubtedly pronounced changes had taken place in the glands, but these changes, in my opinion, generally bore a closer resemblance to those usual in exophthalmic goitre rather than those which we are accustomed to expect in simple goitre. Papillary outgrowths of the alveolar walls, for example, were very marked, while the distension of vesicles with imprisoned colloid was rarely noticeable. Branchings and ramifications of the alveoli were frequent. Moreover, in two sections I observed considerable blood effusion into the substance of the gland, a fact for which I can offer no explanation.

Professor Langhans very kindly gave me in Berne a manuscript report of the histological changes which he had observed in the rat goitres, produced by the Swiss Goitre Commission as a result of seven months' feeding on Lauterbrunnen water; at the same time I was permitted to see the specimens themselves. Briefly summarised, Langhans's observations show that there occurred no new formation of follicles, no branching of the alveoli, no characteristic nuclear changes. He has noted degenerative processes proportionate to the period of exposure to goitrous influences, desquamation of the epithelium lining the vesicles, and increase in volume of the protoplasm. The nucleus he found to lie near the base of the cell "very eccentrically placed," but he observed none of the alterations in structure described as not infrequent by Bircher. The alveoli were mostly filled with desquamated cells.

Histological research, therefore, has established the fact that marked changes occur, and has provided a description of several, but further experiments are necessary to establish the sequence of these changes, their interdependence on one another, and their bearing on the etiology of the disease.

## CONCLUSION.

Gentlemen, I have concluded my argument. I have endeavoured to put as succinctly as possible the ascertained facts and the logical conclusions whereon is based my belief that the essential cause of endemic goitre is a micro-organism that finds its home in the intestines of man, and there creates a toxin which so influences the thyroid gland that it undergoes the enlargement which is the dominant symptom of the infection. In searching the existing literature on the subject I have endeavoured to omit no observation and to pass by no fact that appeared to merit attention, and I have been careful to set down as a fact within my personal knowledge nothing which I have not satisfied myself to be accurately true. Nor have I attempted to propound deductions without setting forth the premises from which I believe them to result.

I am, however, well aware of, and I have been at some pains to explain, the incompleteness of our present knowledge of the facts essential to a final determination of the etiology of goitre. As we have passed from stage to stage in our argument suggestions have arisen and side issues been aroused, each of which still offers a field of fruitful promise to the investigator, and any of which may bring to light fresh facts that may cause us eventually to modify the belief which, to my mind, the evidence at present before us justifies.

It is impossible to consider the parasitic thyroiditis described by Dr. Carlos Chagas, or the ingenious methods by which Dr. Bayon has produced enlargements of the thyroid gland, without being impressed with the possibility that in the near future we shall have to recognise several distinct causes of endemic thyroidomegaly—and therefore several distinct diseases of the thyroid gland—of which the endemic goitre we have been discussing is, in fact, but one. But of this at least there can be no doubt: to the disease which we have been investigating, with its widespread prevalence and appalling consequences, can be attributed no small fraction of the sum-total of human suffering, and incomplete as our knowledge of its causation is, we know enough to make it certain that good sanitation, cleanly houses, cleanly food, and the provision of water-supplies which are not fouled by the excreta of man and beast are measures which promise an extermination of the disease.

### ADDENDUM (*Jan. 3rd, 1913*).

In a comprehensive paper on the etiology of endemic goitre, published within the last few days,[3] E. Bircher refers to an extensive series of experiments which have lately been carried out by Sazuki, under the direction of Professor Wilms, of Heidelberg, with a view to studying the action of organic poisons in the production of goitre.

These experiments, as quoted by Bircher, are as follows:—1. By feeding animals (rats?) on cooked rice mixed with rat fæces and by the subcutaneous injection of rat fæces moderate-sized enlargements of the thyroid gland of a diffuse form were produced. 2. Feeding with decayed fish. Negative result. The animals showed disturbances of growth and died rapidly. 3. Feeding with decayed meat. Negative result. 4. Feeding with calf's thymus. Negative result. 5. Subcutaneous injection of the dead body in small and large doses gave negative results. The animals (so treated) soon died. 6. Subcutaneous injections of tyrosin gave negative results. 7. Subcutaneous injections of acetonitrile yielded negative results. 8. Feeding with rat fæces mixed with iodide of potassium yielded negative results. 9. Feeding with rat fæces mixed with thyroidin yielded negative results.

Commenting on these results Bircher says: "These different experiments show that though the organic poisons are not capable of producing goitre, yet the feeding and subcutaneous injection of fæcal matter can lead to goitrous changes, as has already been shown by McCarrison; and, further, that iodine preparations, such as potassium iodide and thyroidin, are capable of exercising a restraining influence on the formation of goitre."

This confirmation of my experiments by Wilms and Sazuki lends further striking support to my contention that the excitant of the disease is resident in the intestinal tract.

[3] Ergebnisse der Chirurgie und Orthopädie, Band v., Berlin, 1913.

THE BROMPTON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST.—The next special post-graduate course in the Diagnosis and Treatment of Pulmonary Tuberculosis at this hospital will commence on March 3rd, and will continue for a fortnight. Each morning there will be demonstrations and practical work in the laboratory, and each afternoon there will be clinical demonstrations in the general and special out-patient departments and in the wards. In connexion with the course a series of public lectures will be given at 4.30 P.M., and on Friday, March 14th, there will be an expedition to the Frimley Sanatorium. The syllabus of the course, the list of lecturers, and other particulars, may be obtained on application to the Dean at the hospital.

# A Clinical Lecture
ON
# TUMOURS OF THE KIDNEY.

*Delivered at the Cancer Hospital, Brompton, on Jan. 29th, 1913,*

BY R. H. JOCELYN SWAN, M.S. LOND., F.R.C.S. ENG.,
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GENTLEMEN,—In the series of lectures which are to be given at this hospital it is our object to make them as much a clinical demonstration as possible, and though we may of necessity refer to the work of others in each subject, we shall illustrate our remarks by reference to cases in the hospital as well as by showing numerous pathological specimens and microscopic sections prepared from them.

This afternoon I propose to speak on the subject of Tumours of the Kidney, under which title I wish to include any form of growth arising in the renal tissues, excluding any fluid or cystic swelling of the kidney, such as a hydronephrosis or pyonephrosis. For this purpose I have collected 12 cases, 10 of which have occurred in my own practice and the remaining 2 in that of my colleagues in the hospital. In addition I have two specimens which were found in the course of an autopsy.

## VARIETIES OF RENAL GROWTHS.

There are several varieties of growths found in the kidney, and in recent years a great deal of pathological work has been carried out upon them. A very great deal has been written upon the subject, and several theories as to the origin of these tumours have been brought forward, so that much confusion has arisen as to their true nature. This is particularly true with regard to the most common form of malignant tumour of the kidney—namely, the hypernephroma; and I shall again refer to the discussion that has taken place when I deal with the pathology of this tumour. Of the growths which affect the kidney, a division must be drawn between those which arise in the renal parenchyma and those of the renal pelvis, and the best classification is that given by Garceau.[1]

*A. Solid tumours of the renal parenchyma.*
*Malignant.*—(1) Hypernephroma; (2) carcinoma; (3) sarcoma.
*Benign.*—(1) Adenoma; (2) angioma; (3) lipoma; (4) fibroma.
*Embryonic tumours.*—(1) Dermoid; (2) rhabdomyoma; (3) mixed tumours.

*B. Tumours of the renal pelvis.*—(1) Papilloma; (2) villous-covered carcinoma; (3) epithelioma.

The hypernephromata are by far the most common form of malignant tumour of the kidney, occurring in from 75 to 80 per cent. of all renal tumours. The pathology of this tumour was first brought into prominence by Grawitz[2] in 1883, who described it as arising from the small masses of aberrant adrenal tissue which are frequently found in the cortical portion of the kidney. These tumours arise in the cortical portion of the kidney, forming rounded masses with a capsule formed of condensed renal tissue; they tend to spread towards the renal pelvis, which they ultimately invade and also may gain entrance into the renal vein or even the inferior vena cava. On section a hypernephroma varies considerably. It may be of firm consistence, but frequently shows areas of necrosis and softening, and most commonly some dark areas into which hæmorrhage has taken place. One marked feature which is present in almost all cases is the presence in the tumour of small areas of a fairly bright yellow colour. These changes are well shown in the different specimens which I have collected, hæmorrhage and a certain amount of necrosis being present in nearly all of them.

On microscopic section the growth exhibits a structure which reminds one, at first sight, of the normal suprarenal. The cells are arranged in palisade form, large, of polygonal shape, and with well-marked cell walls. The protoplasm is clear and contains highly refractile bodies, and is found to contain both fat and glycogen. It was the close resemblance of the cells of this tumour to those of the suprarenal capsule which led Grawitz to believe that hypernephromata arose from the aberrant suprarenal rests in the kidney; this view found many supporters, and much discussion arose as to whether the tumours should be classified as carcinoma or sarcoma. At the same time, it should be said, the suprarenal rest origin has not been accepted by all pathologists, and it has been recently held by Stoerk and by Shaw Dunn[3] that these tumours arise in the renal tissues, especially in cirrhotic kidneys, and are thus true renal carcinomata. Whilst so much uncertainty remains as to the nature of these tumours it is as well to adopt the name hypernephroma suggested by Lubarsch.[4]

In connexion with the origin of these tumours we have a specimen (Fig. 1) in our museum which was found by Dr. E. H. Kettle in the course of a post-mortem examination upon a case of epithelioma of the tongue. Embedded in the medullary portion of a cirrhotic kidney is a small yellow tumour of the size of a large pea, which shows on microscopic section the typical appearance of a Grawitzian tumour, a tumour so small that it had produced no symptoms during life, but which is of great pathological interest.

Hypernephroma is disseminated by direct extension or by metastatic deposit. If the growth reaches the renal vein emboli may find their way to the lungs, &c., and deposits are most frequently found in the lungs, the liver, or in the bones.

Primary carcinoma is a much more rare form of malignant tumour of the kidney than hypernephroma, and in this hospital we have only one specimen of it. Previously a large number of tumours were classified as carcinomata which, upon further examination, prove to be hypernephromata, so that the tables given in the various text-books are quite unreliable. Several well-authenticated cases of true carcinoma are recorded, but probably they do not amount to more than 2 per cent. of renal tumours. The growth appears rapidly to invade the renal pelvis and so gives rise to persistent hæmaturia. On microscopic section the growth shows similar alveolar arrangement to carcinoma elsewhere in the body.

Sarcoma of the kidney occurs as a primary tumour both in the round and spindle-celled variety. It may attack the kidney in late adult life, but is more commonly a tumour of early years—occurring in quite young children. We have one example here removed from a child aged 7 months by my colleague Mr. Howell Evans, which you see in this specimen is a greyish tumour occupying almost the whole kidney. The growth may commence in the capsule or in the tissues of the hilum, rapidly spreading and invading the kidney.

The *innocent tumours of the kidney* very rarely give rise to symptoms during life unless they attain a large size. Adenoma of a papillary or tubular form are frequently found as small cortical tumours of the kidney during a post-mortem examination. The chief interest of them lies in their relationship to carcinoma of the kidney which may arise in them.

Angioma of the kidney is a distinctly rare condition. Recently a form of angioma of the apex of a renal papilla, giving rise to renal hæmaturia, has been described by Hurry Fenwick, but a more rare condition in which a cavernous angioma existed in the kidney as a distinct tumour came under my care in November, 1911.

A young man, aged 19, previously quite well, was surprised to find that upon micturition he passed bright red blood without pain of any kind. This profuse hæmaturia continued in spite of complete rest and the irrigation of the bladder with adrenalin under the supposition of there being a villous growth in the bladder. When I saw him on the third day of the profuse hæmaturia he was blanched, and his pulse small and rapid. A recent specimen of urine was deeply stained with bright red blood and had clotted in the vessel. There was no pain over the suprapubic or renal areas and no other symptom but the hæmorrhage. On cystoscopy I found the bladder to be free from growth, but bright blood was issuing from the left ureteric orifice with good force. I rapidly exposed the left kidney, which appeared quite normal from the outside, but which on section was found to contain a soft tumour of distinct cavernous-looking tissue. The organ was removed, and on microscopic examination the tumour proved to be a cavernous angioma. (Fig. 2.)

The specimen has retained its colour admirably, and you will see that the tumour appears to consist of erectile tissue.

Lipomata and fibromata of the kidney are rare. Usually they are quite small, but cases are recorded in which large tumours were found. Clinically they are unimportant.

The *embryonic tumours of the kidney* are comparatively rare. There have been recorded only two cases of dermoid

of the kidney (Paget [5] and Haeckel [6]), and some authorities deny the existence of rhabdomyomata occurring in the kidney.

The embryonic mixed tumours of the kidney are those which are composed of both epithelial and connective tissue elements and show a great complexity of structure. There may be striped or smooth muscle fibre, cartilage, bone, together with tubular or glandular epithelial structures. These different elements grow to different extent in a tumour, one variety usually predominating, so that it appears in one part to be sarcomatous, in another carcinomatous. These tumours may grow very rapidly and attain a large size, and are apt to undergo myxomatous or degenerative changes. They arise in the substance of the kidney; they do not infiltrate in the same manner as a hypernephroma, but tend to push aside the renal tissue and to press upon neighbouring organs. Metastases are not frequent. Birch-Hirschfeld [7] first described these tumours as embryonic adeno-sarcomata, and looked upon them as derived from the inclusion in the kidney of elements of the Wolffian body. Wilms,[8] however, suggested that the various elements of a mixed tumour arose from islets of embryonic tissue, but so far there is no uniformity of opinion as to their origin. The tumours are found in early childhood, forming a swelling in the loin. They are apparently very malignant.

Of the *tumours of the renal pelvis* the papilloma is the most common. Albarran and Imbert [9] quote a series of 22 cases in which a papilloma commenced in the renal pelvis. The tumours may be multiple and may spread as small tumours along the course of the ureter. The villous-covered carcinoma may occur as a primary tumour or may be a malignant form of a simple papilloma. Macroscopically the growth appears as a papilloma, but the base is infiltrated and has all the characteristics of carcinoma, spreading by direct continuity and by metastases.

Epithelioma of the renal pelvis of the squamous-celled variety has been described, and has been thought by Hallé [10] to be secondary to calculous or some other form of pyelitis.

## SYMPTOMS.

The symptoms of a renal growth vary to a certain extent with the nature of the tumour present. The hypernephroma is by far the most common form of growth in the kidney, and I shall first speak of the symptoms of this, and later point out the differences in them in the other forms of renal growth.

The three prominent symptoms of hypernephroma are hæmaturia, pain, and the presence of a renal tumour. *Hæmaturia* is perhaps the most important symptom, and immediately attracts the patient's attention. It is frequently the first symptom noticed, and in my own cases occurred as the initial symptom in six out of nine cases. The bleeding commences suddenly without pain, and the patient is surprised to find on micturating that the urine is loaded with blood. Usually the bleeding is fairly profuse and lasts for several days, when it may entirely disappear for some weeks, to recur again in exactly the same manner. Bleeding may occur irrespective of any injury or undue exertion, but in one of my cases it distinctly followed any train journey, and in another was produced on several occasions after a long walk. In some cases the urine may contain clots, and I would ask you in all cases in which clots are present to examine them most carefully, especially as to their shape. The best way to do this is to float them in a large basin of water, pouring off the coloured water and washing the clots until they can be easily seen. If I find any clots of pyramidal shape, indicating their formation in the renal pelvis, or of a long, round, worm-like appearance, with decolourised ends, from the formation in the ureter, I have little doubt that the bleeding is renal in origin.

Occasionally slight hæmaturia may be present, lasting more or less continuous for some weeks, but in my experience hæmaturia is more frequently of the nature of a recurring profuse hæmorrhage. In the intervals between the bleeding the urine might be quite clear and free from albumin.

*Pain* in hypernephroma is generally of a dull, aching character referred to the loin in the renal angle—that is, the angle formed by the last rib and the outer border of the erector spinæ muscle—or may extend to the abdomen, iliac fossa, or chest. This aching may precede the onset of hæmaturia, but may occasionally be very severe, similar to the renal colic of a calculus. This severe pain is usually indicative of the passage of a blood-clot down the ureter, when hæmaturia will follow an attack of acute pain, or the attack may be unaccompanied by any hæmaturia. In two of my cases acute pain in the loin described as of a "tearing" nature was present without any accompanying hæmaturia on more than one occasion, and I suspect that this was due to the occurrence of hæmorrhage into the substance of the growth and the resulting increase of intrarenal pressure. It is but rarely that any pain is present on micturition, but occasionally the presence of blood-clot in the bladder may give rise to pain and increased frequency of micturition.

A *tumour* in the loin may be large enough to be noticeable to the patient or may be found upon a clinical examination. In some cases the tumour retains the shape of the kidney, or it may be felt to be nodular or irregular. The lumbar region should be examined bimanually during fairly deep inspiration in the dorsal posture, and if no enlargement of the kidney is felt examination should be made in the knee-elbow position, when it may be more easily felt. Occasionally a definite, localised enlargement of the kidney can be felt as in one of my cases (Fig. 3), when a mass could be felt projecting from the ventral aspect of the kidney as large as a cricket-ball. In some cases, when the enlargement chiefly affects the upper pole, it may be hidden by the costal arch, when the lower pole may be palpable, apparently low placed but not enlarged.

In one case of a large hypernephroma I was much impressed by a symptom which at the time was new to me, but which I have subsequently seen in another case of renal enlargement—namely, a calculous pyonephrosis. In the case of this large hypernephroma of the right kidney the tumour could not be felt owing to the fact that the anterior border of the liver descended to a hand's breadth below the costal margin; dulness was continuous upwards to the level of the fifth rib in the mammary line and to the fourth rib in the mid-axillary line, and caused much doubt as to the nature of the trouble. Owing to the lumbar pain and the occurrence of attacks of profuse hæmaturia, I explored the kidney and found this large growth, which had extended upwards and in its increase had *pushed* the liver forwards and downwards, rotating it upon a horizontal axis. To remove the kidney I had to do a transperitoneal operation, and found the liver free from metastases, but the growth was adherent in its upper part to the diaphragm, and I have little doubt was incompletely removed, as the patient died some eight months later with signs of growth in the base of the right lung. Here the "dislocation" of the liver prevented even such a large growth from being palpated.

The remaining symptoms of the disease are due in the most part to pressure of the tumour or to metastases. Varicocele is occasionally present, as pointed out by Sir Henry Morris, and is especially significant if it is present in the right side. Dyspnœa may be due to pulmonary invasion, or a tumour may appear in some part of the skeleton.

## DIFFERENCE IN THE SYMPTOMS BETWEEN HYPERNEPHROMA AND OTHER TUMOURS OF THE KIDNEY.

There are a few points of difference in the symptoms of hypernephroma and other tumours of the kidney which may help in arriving at a diagnosis of the nature of the growth.

Hypernephroma is most common between the ages of 50 and 70, and is of comparatively slow growth; sarcoma is more common in childhood, and forms a rapidly growing tumour with early cachexia. Carcinoma is a disease of later life, gives rise to more pain, and usually to constant hæmaturia; whereas in sarcoma hæmaturia may be absent, and in hypernephroma is usually of an intermittent type. Glandular enlargement is more common in carcinoma, either about the kidney or in distant glands, whereas a pulmonary or osseous deposit is more usual with hypernephroma. Carcinoma and sarcoma tend to infiltrate the surrounding tissues more rapidly than hypernephroma, so that the resulting tumour of the kidney may be more fixed in position.

Embryonic tumours are most common in early life, and usually form a rapidly growing tumour of the kidney. Pain and hæmaturia are infrequent, but a marked feature of these growths is their liability to cause symptoms by pressure upon other organs. Thus, œdema of the legs, or even ascites with enlargement of the superficial abdominal veins, jaundice, or dyspnœa, may be present.

With tumours of the renal pelvis, hæmaturia is the marked symptom. It may occur in profuse attacks, often painless or giving rise to acute pain if clots are passed down the ureter. The symptoms may be spread over a number of years in the papillomatous growth. The renal tumour may vary in size if the ureter becomes blocked by growth or by blood clot, the increase in size being accompanied by an increase in pain in the affected side and by the absence of blood in the urine. It is of importance to recognise in these cases that a cystoscopic examination may reveal small secondary villous tufts in the bladder in immediate vicinity to the ureteric orifice.

### THE DIAGNOSIS OF A TUMOUR IN THE KIDNEY.

In arriving at a diagnosis it must be ascertained (1) that the hæmaturia is of renal origin; and (2) that the tumour in the loin is an enlargement of the kidney.

1. If when the case presents itself there is a combination of renal pain, tumour, and hæmaturia, especially if blood clots of characteristic renal or ureteric shape are present in the urine, there can be little doubt that the bleeding proceeds from the kidney, but frequently a diagnosis has to be made from a single symptom. Constant and even profuse hæmaturia, painless in character, and uninfluenced by exertion, may be caused by both renal and vesical lesions, and I cannot better exemplify this than by mentioning cases in which error has been made.

The case of angioma of the kidney was thought to be one of villous tumour of the bladder, and so also was one of my cases of rapidly growing hypernephroma by well-known physicians, whilst another case was sent to me by the late Dr. J. H. Bryant as a case of carcinoma of the kidney on account of the intermittent profuse hæmaturia with renal enlargement, which I found on cystoscopic examination was in reality a hydronephrosis caused by a villous tumour of the bladder which caused obstruction to the flow of urine from the ureteric orifice. Frequently with vesical bleeding other symptoms, such as increased frequency of micturition or pain during or following the act, are present, but these may be due also to the presence of blood-clot in the bladder, and I cannot urge too strongly the necessity of a thorough cystoscopic examination in these cases. Even if no lesion is found in the bladder, and there is no change in the ureteric orifice suggestive of renal tuberculosis or ureteric calculus, this elimination is useful, whilst frequently blood can be seen to be emitted from one ureteric orifice. It has been urged that a cystoscopic examination is futile in cases of hæmaturia, but this is quite erroneous, and with the present-day modern irrigating cystoscopes sufficient clearness of the medium can usually be obtained to see a blood-stained efflux from a ureteric orifice and will determine not only that the bleeding is renal in origin but will show the side affected.

Renal hæmaturia may be present in other diseases of the kidney than growth. In renal calculus the hæmaturia is usually slight and often influenced by exertion. There is more pain experienced with calculus, and in the urine pus or urinary crystals may be found. Further, a skiagraphic examination will, under favourable conditions, show a fairly defined shadow in contrast to the ill-defined blurring of the renal space in growth.

In renal tuberculosis hæmaturia may be present, but the diagnosis is usually easy. The age of the patient in tuberculosis, usually of early adult life, the increased frequency of micturition, and the presence of pus and tubercle bacilli in the urine, as well as the enlargement of the ureter felt per vaginam or per rectum, and the marked changes in the cystoscopic appearance of the ureteric orifice, are all points in favour of renal tuberculosis.

A simple hydronephrosis may give rise to hæmaturia and may present some difficulty in diagnosis. The varying size of a renal tumour may suggest a hydronephrosis, but may be due to the distension of the kidney with blood in a renal growth; in hydronephrosis the renal swelling is more regular on palpation, is often of long standing, and may give the sensation of fluctuation or thrill. Frequently some cause for the hydronephrosis can be found.

2. In some cases of renal growth hæmaturia may be absent and the patient is seen complaining of a tumour in the loin and pain. In these cases it is necessary to determine that the tumour is really renal in origin and to differentiate it from other tumours in the same situation.

A tumour of the kidney can be felt to descend from under the costal margin on inspiration, can be grasped bimanually, and pushed forward by the posterior hand. It usually retains the shape of the kidney, rounded in front, and with no sharp edge or notch; the colon is often placed in front of the renal tumour, and the area of resonance of the colon in the loin is lost. The swellings which are most likely to be confused with a renal tumour are tumours of the liver or gall-bladder on the right side or of the spleen on the left, an ovarian tumour with a long pedicle, or a malignant growth of the colon. It will suffice to mention these here, as the points in favour of each will be readily recalled.

Finally, it remains to determine the nature of the lesion of the kidney, if the tumour of the loin be diagnosed as of renal origin. A renal enlargement may be due to hydro- or pyonephrosis, to a cystic swelling or to polycystic disease, to tuberculosis, growth, or to hypertrophy of a single kidney, from the absence, destruction, or removal of the other. Hydronephrosis, tuberculosis, and calculous pyonephrosis have already been discussed, but pyocystic disease may give rise to a renal tumour as well as to hæmaturia. In polycystic disease both kidneys are usually enlarged and may reach a very large size. The urine is pale, of low specific gravity, and usually contains albumin. The disease occurs in any age, but there is frequently a considerable atheromatous change in the arteries, and retinal changes may be present. In one case under my care, in a woman aged 65, the right kidney was enlarged to double the size of the left, there was intermittent hæmaturia, but in the intervals the urine was only of specific gravity 1004–1006.

A single kidney is unlikely to be confounded with a renal growth, as, except for slight enlargement, it causes no other symptom unless diseased. A cystoscopic examination or urinary segregation would show that only one kidney was present.

### TREATMENT OF RENAL GROWTH.

Before any radical measure can be undertaken to remove a renal growth thorough examination must be conducted to ascertain (1) that no metastases are present and (2) that the other kidney is present and functionally active.

A careful examination should be made of the liver, the thorax, and the osseous system for any sign of metastatic growth and of the abdomen or lower extremities for any sign of obstruction to the large venous trunks, which, if present, would contra-indicate any operation for removal of the growth. Fixation of the renal tumour in the loin would also point to the spread of the disease outside the renal capsule to the perinephric tissues.

The existence of the other kidney may be proved if urine is seen to be emitted from the ureteric orifice of the presumably unaffected side on cystoscopic examination, but this observation alone gives no indication of the functional activity of the organ. This may be done by separating the urine of the two sides by a Luys's segregator or, better, by passing the ureteric catheter into the ureter of the side to be estimated and collecting the urine from that side separately.

In my own practice I not only estimate the urea content of the urine collected, but I make use of one of the colour reagents to test the renal activity. After the catheter has been in position for about half an hour and is found to be acting satisfactorily, I inject 15 minims of a 5 per cent. solution of methylene blue into the gluteal muscles and watch for the first sign of colouration in the urine flowing from the catheter. If the renal function is unimpaired a greenish tint will be found in the urine in 30 minutes, increasing to an emerald green in an hour or an hour and a half after the injection was given. Even in 15–20 minutes after the injection a colourless product may be found in the urine, which may be converted into green by boiling for a few minutes with acetic acid.

If the urea percentage is good and methylene blue is shown present in the urine within 30 minutes there is strong evidence that the remaining kidney is working satisfactorily. The same colour reaction may be carried out with indigo-carmine or the renal activity tested by noting the time of appearance of sugar in the urine after an injection of phloridzin.

If these tests are satisfactory and there are no metastases the only treatment that can hold out any prospect of cure is the removal of the affected kidney. A small tumour enclosed in its capsule of compressed renal tissue which may have given rise to hæmaturia is the most favourable one

FIG. 2.

Cavernous angioma of the kidney.

FIG. 1.

A very early hypernephroma embedded in the substance of a cirrhotic kidney, found during a post-mortem examination.

FIG. 3.

Section of a large hypernephroma of the ventral aspect of the kidney, to show the invasion of the renal pelvis by the tumour.

FIG. 4.

An early hypernephroma of the kidney. Renal pelvis filled with blood-clot.

FIG. 5.

An advanced and rapidly growing hypernephroma of the upper pole of the kidney

FIG. 6.

Papillary carcinoma of the lower pole of the kidney

for operation. Such a one is that of a case under my care (Fig. 4) in which intermittent renal hæmaturia had occurred and in which I performed nephrectomy for a small hypernephroma in January, 1909; the patient still remains quite well.

The choice between a lumbar or a transperitoneal operation is chiefly influenced by the size of the tumour to be removed, but in all cases I endeavour to remove as much of the surrounding perirenal fat as possible with the tumour and to ligature the renal vein as far away from the kidney as I can, as well as the upper few inches of the ureter. In one instance, in operating upon a large hypernephroma, I had great difficulty in separating it from the diaphragm which was probably directly infiltrated; in this case recurrence took place in the base of the lung from which death ensued in eight months. Of the remaining seven cases of hypernephroma two are still quite well, one two years and the other one year and eight months after the operation, one died from recurrence two years and one six months after the operation; one case (Fig. 5) is still alive, but I had to do a second operation for recurrence in the lower end of the lumbar incision three months after the nephrectomy. Two cases died before leaving hospital, one as the direct result of the operation within 24 hours, and the other from pneumonia after 15 days. In the latter case a small metastatic deposit was present in the liver, which showed the same microscopic structure as the primary tumour. The case of carcinoma of the kidney (Fig. 6) remains well two years after the operation.

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# BONE-MARROW METASTASES AND ANÆMIA IN GASTRIC CANCER.

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ONE of us (A. W. H.) published recently with Professor John H. Teacher[1] a case of cancer of the stomach with metastases in the bone marrow in which the blood picture was suggestive of pernicious anæmia. The present case differs from that one in several points, and in it the condition of the blood bore a closer resemblance to that of pernicious anæmia.

The first patient was a woman, 64 years of age, whose symptoms pointed somewhat indefinitely to cancer of the stomach. Bone pains were marked. She had a severe anæmia of a peculiar type, showing marked diminution of the red cells, high colour index, granular basophilia, polychromatophilia, slight poikilocytosis, megalocytosis, a relative lymphocytosis, and the *constant* presence of numerous myelocytes and erythroblasts, the majority of which were megaloblasts.

In the case under consideration at present the patient was a man, aged 52 years, whose appearance was quite in accordance with a diagnosis of pernicious anæmia, but his history and an examination of the abdomen made it clear that he was suffering from malignant disease of the stomach. The blood showed a high colour index, megalocytosis, slight polychromatophilia, at first a relative lymphocytosis, a moderate number of myelocytes, and only a few normoblasts and megaloblasts. It required long and patient search to find a megaloblast, just as is often the case in pernicious anæmia. This was a striking contrast to the first case, where erythroblasts were constantly present in large numbers. As in the first patient, bone pains and tenderness were marked. With the knowledge gained from the first case a diagnosis of carcinoma of the stomach with metastases in the bone marrow was made, and this diagnosis was fully confirmed at the necropsy. Microscopic examination of the bone marrow clearly showed that it was not the marrow of pernicious anæmia.

The patient was admitted to the Glasgow Royal Infirmary on August 12th, 1911, complaining of increasing pain in the stomach and vomiting of 16 weeks' duration. For two or three years previously his health had been failing; his appetite had not been so good, and he had some discomfort after food. He also experienced some loss of strength, and thought that he was getting thinner. His symptoms, however, were never severe, and he continued to work until 16 weeks prior to admission. At this time he had an attack of "pleurisy" at the right base and was confined to bed for a fortnight. Since then his gastric symptoms have been greatly aggravated and his general condition has become much worse. The discomfort in his stomach developed into a more or less constant gnawing pain, which was made worse by the ingestion of food. Vomiting, which afforded no relief to the pain, began to be troublesome. During the past 16 weeks loss of flesh has been considerable and his weakness has become much greater. He has not been confined to bed, but has only been able to move about quietly. There has been no hæmatemesis or melæna. The bowels have been inclined to be loose. During the past month the feet and ankles have been swollen, especially after walking about. Headaches have been troublesome. For the last two or three weeks the patient has had pain in the lower half of the sternum. There has been more or less breathlessness on exertion, and a slight cough, accompanied by a scanty black and frothy spit. Nothing of importance in the previous health or family history was elicited.

On admission the patient was found to be a distinctly emaciated man. His complexion was of a yellowish tint. He stated that he had noticed this himself, and that his friends had commented on it. The conjunctivæ were not bile stained. The visible mucous membranes were very pale but showed no pigmentation. He lay flat in bed and was comfortable in any position, making no complaint of pain. There was a moderate amount of œdema of the feet, ankles, and legs extending half way up to the knees. No enlarged glands could be detected. A small hydrocele was present on the left side. The pupils were equal and they reacted normally. The tongue was moist, coated with a thick, white fur, and was slightly fissured. Many teeth were absent and most of those remaining were carious. The abdomen was somewhat full. No superficial reflexes could be elicited. There was well-marked resistance in the epigastrium, with a good deal of tenderness. In the lower epigastrium an indefinite irregular mass was felt which appeared to move slightly with respiration. No peristalsis was visible. The liver and spleen did not appear to be enlarged.

Nothing abnormal was detected on examination of the heart, but during the examination acute tenderness was elicited on percussion of the lower half of the sternum. The anterior half of the right fifth rib was similarly tender on percussion. Examination of the lungs showed nothing abnormal beyond an occasional râle. The urine was amber coloured, acid, of specific gravity 1028, and contained a haze of albumin on boiling, slight indican, distinct bile, and a little pus, but no Bence-Jones protein, blood, sugar, acetone, or excess of urobilin.

Ophthalmoscopic examination showed nothing abnormal.

The blood flowed easily from the puncture and was bright red in colour. The accompanying tables give particulars of the blood counts.

Films showed that the red cells stained well with occasional polychromasia, but no granular basophilia. Poikilocytosis was moderate. There were numerous megalocytes and a few microcytes. No erythroblasts were seen in the examination of several films, with the exception of one free pyknotic nucleus.

On August 17th and 18th the patient complained of pains all over the body. In addition to the situations already noted there was tenderness over both tibiæ, especially the right. Two megaloblasts were seen in the examination of two complete films. 18th: Distinct tenderness over the left sixth rib. 22nd: A fair number of corpuscles showed granular basophilia. Megalocytosis was less and no erythroblasts were seen. 25th: The bone pains and tenderness were still

[1] Glasgow Medical Journal, April, 1910.

marked. There was pain over the lower ends of both femora, chiefly the right. The emaciation was extreme. The patient had lost 12 lb. in weight in 13 days, although the œdema was

*Table of Blood Counts.*

| Date. | Hæmoglobin. | Erythrocytes. | Leucocytes. |
|---|---|---|---|
| August 13th, 1911. | 62 per cent. | 2,751,000 per c.mm. | 2,500 per c.mm. |
| ,, 18th ,, | 60 ,, | 2,325,000 ,, | 3,750 ,, |
| ,, 22nd ,, | 62 ,, | 3,000,000 ,, | 6,770 ,, |
| ,, 26th ,, | 68 ,, | 2,610,000 ,, | 4,000 ,, |
| ,, 30th ,, | 56 ,, | 2,525,000 ,, | 10,000 ,, |

Erythrocytes and leucocytes estimated by Thoma-Zeiss apparatus; hæmoglobin by Haldane's method.

*Differential Counts of Leucocytes.*

| — | Date. | | | | |
|---|---|---|---|---|---|
| | 15/8/11 | 18/8/11 | 22/8/11 | 26/8/11 | 30/8/11 |
| | Per cent. | Per cent. | Per cent. | Per cent. | Per cent. |
| Polynucleated neutrophiles | 56·4 | 68·5 | 64·8 | 78·6 | 91 |
| ,, eosinophiles | 1·6 | 1 | 0·8 | 0·2 | 0 |
| ,, basophiles... | 0 | 1·5 | 0 | 0·2 | 0 |
| Small lymphocytes ... ... | 19·6 | 10·5 | 19·2 | 6·6 | 1·2 |
| Large ,, ... ... | 4·8 | 4 | 2·4 | 3 | 1·3 |
| Large mononucleated and transitionals ... ... ... | 14 | 12 | 9·2 | 7·6 | 4·3 |
| Myelocytes ... ... ... ... | 1·2 | 0·5 | 2·8 | 1·6 | 1 |
| Myeloblasts ... ... ... ... | 2·4 | 2 | 0·8 | 2·2 | 0·2 |

but little less. Sept. 1st: Since last note the patient had gone rapidly downhill. He gradually sank and died on this date.

*Summary of Report of Post-mortem Examination.*

The heart and lungs showed nothing of interest to the case. Abdomen: No fluid and no peritonitis present. There were a few soft fibrous adhesions between the liver and diaphragm. The liver itself was normal in size (44 oz.), rather soft, and showed very slight fatty change. There was no evidence of tumour in the liver. The gall-bladder was healthy. Spleen: Weight 7 oz. The pulp was soft and dark brownish-red in colour. Kidneys: Showed pale and rather narrow cortices, but were otherwise normal. The right weighed 6 oz., the left 7½ oz. The pancreas appeared normal. The stomach was small and its wall was thickened. The pyloric half of the stomach was converted into a thick tube. The duodenum was distended, and the pylorus, which admitted the forefinger, fitted into it like a cervix uteri. The duodenal wall was not thickened. The thickening commenced with the pyloric ring and involved the whole circumference of the stomach wall, extending upwards in its most marked condition to about midway between the pylorus and the cardiac end. This portion formed a tube about two inches in diameter, and the cardiac half was dilated relatively. The muscular wall generally from pylorus to œsophagus was considerably thickened, and its cut surface had a glistening appearance. In the pyloric region, within this glistening muscular coat, there was a diffuse infiltrated thickening, giving the mucous membrane at places a mammillated appearance. The condition suggested a scirrhous carcinoma arising around the pylorus and infiltrating the stomach wall in a backward direction. There was evident ulceration. Two small lymphatic glands were found on the lesser curvature near the cardiac end, and were apparently involved by the tumour. The intestines were normal, as also were the bladder and prostate. The sternum was greatly thickened throughout. The marrow was red, with whitish areas suggestive of tumour scattered through it. The ribs were somewhat brittle although thick. Only traces of red marrow could be seen. Femora: Four inches at the upper end of each bone were examined. The marrow was dark-red in colour, with here and there a few small, rounded, yellowish-white areas about the size of lentils. Both tibiæ and one of the dorsal vertebræ showed nothing grossly abnormal.

*Microscopical Examination.*

Microscopical examination was made of the primary tumour, the bone marrow of the sternum, rib and femur, the spleen, and the liver and kidney. Films were also prepared from the bone marrow of the femur and ribs. The films from the latter were not very satisfactory, as only a little fatty juice could be squeezed out of the ribs.

*Stomach.*—The tumour of the stomach proved to be a carcinoma. No trace of the mucous membrane was apparent, but its place and that of the submucous tissue were occupied by tumour. The tumour cells were large, rounded, oval, or polyhedral in shape, each with a fairly large clear nucleus and distinct nucleolus. They were somewhat loosely arranged in groups supported by a scanty fibrous stroma. The groups of tumour cells were intermingled with numerous round cells and spindle-shaped cells of connective tissue origin. The round cells were more numerous in the superficial parts of the tumour, but in the deeper parts the tumour cells were more abundantly mixed with the spindle-shaped cells, and the fibrous tissue elements were more markedly developed. The tumour infiltrated and destroyed the innermost portions of the circular muscular coat, but the outer portion of this layer remained as a distinct zone. It was traversed by cellular strands of fibrous tissue, and between the circular muscular layer and the longitudinal muscular coat there was a broad zone of fully formed fibrous tissue in which there was no trace of muscular tissue, but a few tumour cells were seen at irregular intervals. These were more or less undergoing granular degeneration. Thick strands of fibrosis passed through the longitudinal muscular layer to the peritoneal surface. On the peritoneal surface there was also extensive fibrosis. A broad layer of vascular and fairly cellular fibrous tissue formed a thick external covering to the muscular wall of the stomach. In it no tumour cells could be made out, but in its inner parts there were small pieces of degenerating muscle, the remains of the outer portions of the longitudinal layer. It was thus evident that the greater bulk of the thickened stomach wall was made up of fibrous tissue, in which tumour elements were exceedingly scanty. The fibrosed zones on the outside of the stomach and between the muscular layers were fairly vascular, but the carcinoma was only very slightly so.

*Sternum.*—The whitish areas were seen to be composed of tumour, having essentially the same characters as the primary growth in the stomach. Here, however, in many places the cells were more closely packed, arranged in larger masses, and almost completely filling up many of the medullary cavities A few of the cells showed colloid degeneration. In other places these cells were more loosely arranged, and numerous smaller rounded cells were also present in considerable numbers. At times these latter were the predominant feature in the medullary cavity; they probably represented a chronic inflammatory reaction of a fibroblastic nature. Here, as in the stomach, overgrowth of fibrous tissue was a conspicuous feature. In some of the cavities the large tumour masses were seen surrounded at the periphery by a narrow zone of fibrous tissue; in others the fibrous tissue was more abundant, only a few small isolated groups of cancer cells lying in its meshes; and, again, in other cases the whole medullary space was filled with fibrous tissue, no tumour cells being visible. The fibrous tissue was much less dense than that in the stomach. The reddish areas consisted of hæmorrhages, although some of them looked like greatly dilated vessels, and were found at the margins of the white tumour-containing areas. Red marrow was also present, but was found remote from the tumour.

*Rib.*—The description given for the sternum may be applied to the rib, the microscopical appearances in both cases being similar with this exception—viz., that the red marrow in the rib was much more scanty and colloid degeneration in the cancer cells was more conspicuous.

*Femur.*—In the femur the tumour cells were arranged in much smaller masses and were surrounded by fibrous tissue and bright-red hæmorrhagic areas. A number of normoblasts were seen in the blood in these areas and at places granular degenerated cancer cells. Numerous polymorphonuclear leucocytes were present in the hæmorrhagic areas, principally towards their margins. It is important to note

that the reddish areas seen in the marrow cavities of the bones, which at the post-mortem examination were thought to indicate a hyperplasia of the red bone marrow, were found on microscopical examination to be in large measure due to hæmorrhages.

*Liver and kidneys.*—These showed nothing of note beyond slight venous congestion and cloudy swelling.

*Spleen.*—The spleen showed, in addition to the ordinary splenic elements, numerous nucleated red cells, both normoblastic and megaloblastic. Here and there normoblasts were seen lying in apposition, with the nuclei close together, apparently having been recently formed by division. Some of the nuclei showed irregularity of their margins. The "blue-iron" reaction in liver, spleen, and kidneys was negative.

Although this subject receives little or no attention in the text-books, the condition is perhaps not very uncommon, and probably passes unrecognised in the majority of cases. In the paper already published a short *résumé* of the recorded cases is given. Since then Ward [2] has given details of what may have been another case, but unfortunately it was not verified by post-mortem examination. The patient was a woman who had a rapid recurrence of an epithelioma after removal of the left breast. There was a large mass on the sternum giving rise to considerable pain, and there were small nodules in connexion with the second and third ribs. Enlarged glands were present in the right axilla. The red corpuscles numbered 4,760,000 per cubic millimetre and the hæmoglobin was 65 per cent. The colour index was 0·68 and the leucocytes numbered 10,800 per cubic millimetre. There were 382 normoblasts and 104 megaloblasts per cubic millimetre. All the erythroblasts were polychromatophile, and some showed basophile granulation (Giemsa). A differential count of the leucocytes gave 61 per cent. polymorphonucleated neutrophiles, eosinophiles 0·6 per cent., small monomorphs 31·2 per cent., large monomorphs 4·8 per cent., and myelocytes 2·4 per cent. A second case was published in Norway by Professor Peter F. Holst,[3] but we have been unable to obtain this paper.

It would appear from a study of the few cases which have been fully investigated that in most instances the blood shows a strong myeloid reaction, numerous erythroblasts and myelocytes being found. Probably most of the cases in which carcinoma simulated pernicious anæmia closely were cases of metastases in the bone marrow. When anæmia occurs in cancer it is usually of the ordinary secondary type, although erythroblasts are said to be a little more frequent (Da Costa [4]), and a relative lymphocytosis is common (Price Jones [5]). But high colour index, megalocytosis, myelocytosis, and numerous erythroblasts do not occur. Since the publication of the first case one of us (A.W.H.) has investigated this point in 24 cases of malignant disease (chiefly of stomach, pancreas, or bowel), and in no case found it controverted.

It seems to us that a diagnosis of carcinomatous metastases in the bone marrow can be fairly easily made. Most reliance is to be placed on the bone pains and the condition of the blood. In both our two cases the bone pains were very severe, and tenderness was marked. With regard to the blood the points to be laid stress on are high colour index, megalocytosis, and the presence of erythroblasts and myelocytes in considerable numbers. Leucocytosis is common, but seems to be variable. In the case under consideration the number of erythroblasts and myelocytes was small, but the destruction of marrow by the cancer was very complete, and possibly at an earlier stage of the disease these cells may have been present in larger numbers. The leucocyte count was low at first, and this with a moderate relative lymphocytosis made the resemblance to pernicious anæmia closer.

Parmentier and Chabrol [6] lay considerable stress on enlargement of the spleen as an aid to diagnosis, but this was not present in either of our cases. The spleen could not be felt during life, and was not enlarged at the necropsy.

It is a notable point that in many of the published cases the cancer has been of a benign nature locally—pyloric, small, and circumscribed. In the present case, although the tumour extended over a fairly wide area, the great amount of fibrosis in it suggests that its progress was slow. Also there was little in the way of spread to the glands and no involvement of the liver, despite the widely scattered metastases in the bones.

Contrasting the histological characters of the tumours in this case with those of the former, it is interesting to note that in both overgrowth of fibrous tissue was a conspicuous feature in the primary and secondary growths. In the case first published colloid degeneration was observed in many of the cancer cells in the primary tumour, but not in those of secondary deposits. In the present case no colloid degeneration was seen in the primary growth, but a few of the cells in some of the metastatic tumours showed it.

Much interesting speculation may be indulged in as to the causation of the profound anæmia. Does it depend on defective hæmogenesis or on excessive hæmolysis? The depraved nutrition of the patient plays a large part, and in many cases the effect of repeated small hæmorrhages must be considerable. In the present case there was no gross hæmorrhage, and occult blood was absent from the stools. No evidence of hæmolysis was obtainable. The urine contained no excess of urobilin, and the liver, spleen, and kidney showed no "iron-blue" reaction. But the red bone marrow was practically destroyed by cancer, so that defective hæmogenesis must have played a large part. In what manner the cancer tissue acts upon the bone marrow it is difficult to say. The metastatic growths or their products may at first stimulate the marrow, and later on destroy and replace it. Upon such an assumption the previously published case represented the earlier stage in which the marrow was stimulated, and showed a strong myeloid reaction, while in the present case the extensive destruction of marrow prevented the reaction. The presence of nucleated red cells in the spleen, many of them showing mitosis, is exceedingly interesting, and may be considered as an attempt on the part of the spleen to take up the rôle of blood formation.

In any case of grave anæmia the presence of pains and tenderness of the bones should always arouse suspicion of carcinoma of the bone marrow. If the blood on examination shows characters suggestive of pernicious anæmia, but with an excess of erythroblasts and myelocytes, the diagnosis of metastases in the bone marrow is highly probable. The present case seems to show that even in the absence of evidence of myeloid reaction, if there be any suspicion of carcinoma of the stomach, high grade anæmia, with high colour index and megalocytosis, taken along with the presence of bone pains, renders the diagnosis of bone metastases almost certain.

[2] THE LANCET, June 18th, 1910, p. 1688.
[3] Norsk Magazin for Laegevidenskaben.
[4] Clinical Hæmatology, 1906.
[5] Archives of the Middlesex Hospital, Tenth Report from the Cancer Research Laboratories, vol. xxiii., p. 73.
[6] Bulletin et Mémoires de la Société Médicale des Hôpitaux de Paris, August 5th, 1909.

THE WOMEN'S IMPERIAL HEALTH ASSOCIATION.—The annual meeting of this association was held on Jan. 29th at 7, Hanover-square, London, W., the President, Muriel Viscountess Helmsley, being in the chair. The association had a year of good work to report. Schools for mothers have been started in Lambeth, North Kensington, and Tottenham, and a juvenile health crusade is enlisting children all over the kingdom as soldiers to fight the battle against disease. The antituberculosis play produced at the Court Theatre in November was found to have provoked wide interest, as many requests had been received that it might be performed in the provinces. The difficulty here was the expense involved, but arrangements had been made, it was said, to have a cinematograph film taken which would enable the lessons of the play to reach a much larger audience. The association has continued the caravan tours, and this year Sussex was visited and certain places in Kent and Surrey. The London Parks Caravan worked during the summer at Battersea Park, Clapham Common, Wandsworth Common, and Tooting Common; the London County Council gives special permission for the van to take up its stand in the parks, when a lecture is given which is illustrated by lantern slides and cinematograph pictures thrown on a daylight screen which is hung on the side of the van. During the year 310 lectures have been delivered under the auspices of the association, many of them illustrated by lantern slides and cinematograph films. The treasurer's report was satisfactory, and he was able to point out that economy had been effected in several directions without any decrease in efficiency.

# SOME OBSERVATIONS ON A SERIES OF 78 CASES OF STREPTOTHRIX INFECTION.[1]

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BY way of contribution to a discussion upon streptothrix infections I thought that it would be worth while to refer to some points in connexion with a series of cases which have been investigated in my laboratories at the Middlesex Hospital, and in which the presence of the causative parasite has been demonstrated positively by laboratory methods.

In the Milroy lectures On the Streptotrichoses and Tuberculosis in February, 1910,[2] I was able to refer to 53 cases of the kind which had been investigated at the Middlesex Hospital during the preceding ten years. During the last three years 25 additional cases have been examined—13 cases of primary infection of parts about the mouth and neck, 6 cases of primary infection of the appendix, 5 cases of pulmonary infection, and 1 case of cystitis. The series, therefore, now includes 78 cases. A very large majority of these have occurred in the routine of hospital work, and material from the remainder has come from cases outside in which I have been consulted. If the generally prevailing idea as to the comparative rarity of streptothrix infections were correct, this series of 78 cases investigated in one laboratory during a period of 13 years might seem exceptional, since Acland, who in the year 1884 identified the first case of human actinomycosis recorded in this country, was able to collect only 109 British cases published during the 23 years 1884–1906. But it is certain that, excluding for the time all cases diagnosed as cases of tuberculosis, cases of streptotrichosis are much more common than the number of recorded cases would lead one to believe. And I am convinced that my own series of 78 cases, observed during 13 years, understates very seriously the frequency of occurrence of cases of streptotrichosis in ordinary hospital practice. The series includes only cases in which either a streptothrix was obtained in culture on artificial media, or in which typical branching mycelium was identified in stained specimens of material. Had cases in which there were found what were almost certainly rod-forms and spores of a streptothrix been included, the list would have been considerably longer. The number of cases of appendix infection, for instance, would have been increased largely. The question of the microscopic demonstration of streptotricheæ will be referred to later on. Meanwhile, I may deal with the question as to whether there is otherwise any reason for believing that our results at the Middlesex Hospital are in any way exceptional, in the sense that they do not represent the average of hospital practice.

In order to test the value of any special series of cases the best method is that of comparison of the individual result with the collective results of others. If the outcome of individual experience coincides nearly with the outcome of collective experience, then the individual experience may be taken fairly as representing the normal average. I will therefore collate the Middlesex series of cases with series of cases collected elsewhere by the following tests: (1) as to age incidence; (2) as to sex incidence; (3) as to the influence of occupation on incidence; and (4) as to the more frequent sites of primary infection.

In the matter of sex incidence the Middlesex series of 78 cases may be compared with one of 405 cases collected by Leith and with Acland's series of 109 cases in which sex is stated in 101.[3] It will be seen that the figures of the Middlesex series coincide nearly exactly with Acland s, whilst Leith's figures show a somewhat higher prevalence amongst males.

| | Number of cases. | | Sex percentage. | |
|---|---|---|---|---|
| | M. | F. | M. | F. |
| Leith (collected cases) ... ... | 235 ..... | 110 ..... | 72·9 ..... | 27·1 |
| Acland ,, ,, ... ... | 65 ..... | 36 ..... | 65·0 ..... | 35·0 |
| Middlesex Hospital... ... ... | 51 ..... | 27 ..... | 65·4 ..... | 34·6 |

In the matter of age incidence the Middlesex cases correspond closely with those of Acland's series. The age is stated in 84 of the latter, and was ascertained in 70 of the former.

| — | Total. | Under 15 years. | 15 years and under 25. | 25 years and under 35. | 35 years and under 45. | 45 years and under 55. | 55 years and upwards. |
|---|---|---|---|---|---|---|---|
| Acland's collected cases | 84 | 12 | 24 | 25 | 9 | 7 | 7 |
| Middlesex cases ... ... | 70 | 6 | 23 | 19 | 9 | 11 | 2 |

In Acland's series 49 of the cases, or 58·3 per cent., occurred between the ages 15 and 35 years; in the Middlesex series 42 of the cases, or 60 per cent., occurred within the same age period.

The influence of occupation on the incidence of infection is an interesting subject for consideration in connexion with the pathology of streptotrichosis. From the first it has been recognised that infection may be carried to man and lower animals by means of straw and grain. That fact was established by clinical observation; it was afterwards found that, when not living as parasites on man and other animals, the streptotricheæ are essentially either saprophytes living in the soil, or parasites of higher forms of vegetable life. And it is well known that acid-fast species which closely resemble in many ways Koch's *B. tuberculosis* occur as natural parasites of grasses and other forms of vegetable life. Acland remarks that "in 17 of the British cases the individual infected had either been in the habit of chewing straws, ears of corn, &c., or had been engaged in agricultural pursuits." An analysis of the histories of the Middlesex series of cases is significant of a probable frequency of transmission of infection to man by various vegetable products. Of the 78 individuals included in the series 20 were either occupied with house work or were "unoccupied," and in the case of 18 others the occupation, if any, was not ascertained. Of the remaining 40, 2 belonged to the professional class, and 38 to the working classes. Of the first two, one was a medical practitioner, and the other was a woman medical student who died as the result of appendix infection some months after taking a long summer holiday in the country. During her stay in the country the patient passed every day through a cornfield, and was in the habit of picking grains and chewing them.

Of the 38 patients of the working classes, no fewer than 24 were engaged in occupations which brought them into close contact with vegetable products of one kind or another. The series includes: Coachmen and stablemen, 7; gardeners, 3; bakers, 2: foreman of timber yard, 1; carpenter, 1; greengrocer, 1; dairymaid, 1; cellarman, 1; working tailor or tailoress, 7.

The group of 7 working tailors or tailoresses (the latter including 2 dressmakers) is an interesting one in this particular connexion; it includes 2 male and 5 female patients who would have been in the habit of constantly passing cotton between their lips. Of these, the 2 tailors had each a submaxillary abscess; the 3 tailoresses suffered respectively from pulmonary streptotrichosis, acute parotid abscess, and a submaxillary abscess; 1 dressmaker had a submaxillary abscess, and the other died with suppurative thrombosis of the superior mesenteric, splenic, and portal veins, resulting from appendix infection. Of the remaining 14 patients of the working classes one was a young man who lodged in a room over a stable, and another was a working blacksmith and farrier whose occupation would bring him into close contact with horses.

Comparison as to site of primary infection in the series of Middlesex cases with that in series of cases collected elsewhere is complicated somewhat, except for the pulmonary cases, by the fact that the former series comprises mostly cases

[1] Being a paper read at a meeting of the Surgical Section of the Royal Society of Medicine on Jan. 14th, 1913.

[2] THE LANCET, Feb. 26th (p. 551), and March 5th (p. 626) and 19th (p. 769), 1910.

[3] I have to express my thanks to Dr. Acland, who has very kindly provided me with the details of the 109 collected British cases which are referred to in his monograph on Actinomycosis in Allbutt and Rolleston's "System of Medicine," vol. ii., Part 1, 1906. Dr. Acland wishes the full share of Dr. P. S. Hichens, of Northampton, in the work of compilation of the series to be acknowledged.

of early infection in which an operation had been performed, or in which the patient had come under medical treatment for an acute illness, and in which the nature of the infection was established as a rule in the routine of every-day laboratory work. The series of collected cases, on the other hand, appear to be made up mainly of advanced cases in which either there was extensive disease of the lungs, or secondary infection of the skin, or in which the nature of the disease was ascertained only after death. And in such advanced cases there would often be multiplicity of infective lesions, and consequent doubt or difficulty in determining the site of primary infection. On comparing the respective statistics, however, it is apparent that this difficulty of comparison arises chiefly in connexion with the published cases of "abdominal" infection. The proportion of early appendix cases at the Middlesex Hospital corresponds nearly with that of the more advanced cases of "abdominal" infection published from elsewhere. The site of primary infection was ascertainable definitely in most of the Middlesex cases. The only cases amongst the 78 with regard to which there could have been any reasonable doubt in this matter were the following. There were 5 cases of right iliac abscess in which the appendix was not absolutely proved to have been the site of primary infection—these cases appear amongst the 20 cases of appendix infection. Then there was one case of renal streptotrichosis in which there was a history of chronic pulmonary trouble some two years previously, and in which it appeared likely that the lung had been the seat of original infection; and there was a case, included with the cases of pulmonary streptotrichosis in which the lung infection was of limited extent, in which there was a history of an operation for appendicitis 18 months previously, and in which death, which occurred soon after the patient came into hospital, was apparently caused by some more serious intra-abdominal complication. Also there was a single case of streptotrichial cystitis, occurring in a stable worker, in which it was probable that there were other undetected infective foci.

The following figures show, subject to what has just been stated, the site of primary infection in the 78 Middlesex cases, in Acland's series of British cases, and in a larger series of 632 published cases collected by Rühah.

*Middlesex Hospital Cases (78).*

| | Number of cases. | Percentage. |
|---|---|---|
| Infections of parts about the mouth and neck ... | 40 ..... | 51·2 |
| Appendix infections ... ... ... ... ... ... ... | 20 ..... | 25·6 |
| Pulmonary infections ... ... ... ... ... ... ... | 14 ..... | 18·1 |
| Other cases (conjunctivitis, renal streptotrichosis, cystitis, and case of accidental infection during an abdominal operation) ... ... ... ... ... ... | 4 ..... | 5·1 |

*Acland's 109 Collected British Cases.*

| | | |
|---|---|---|
| Infections of mouth, face, and neck ... ... ... | 42 ..... | 38·5 |
| Abdominal infections ... ... ... ... ... ... ... | 42 ..... | 38·5 |
| "Chest" infections... ... ... ... ... ... ... ... | 20 ..... | 18·4 |
| Other cases (disease of testicle, of bladder, of prostate and rectum, of brain, and of orbit and brain) ... ... ... ... ... ... ... ... ... ... | 5 ..... | 4·6 |

*Rühah's 632 Collected Cases.*

| | | |
|---|---|---|
| Head and neck ... ... ... ... ... ... ... ... ... | 359 ..... | 57·0 |
| Digestive tract and abdominal organs ... ... ... | 132 ..... | 21·0 |
| Thoracic viscera ... ... ... ... ... ... ... ... | 92 ..... | 14·5 |
| Other cases (infection of skin, 16; seat of infection doubtful, 33) ... ... ... ... ... ... ... ... ... | 49 ..... | 7·5 |

From the foregoing considerations, then, it would appear that the Middlesex Hospital series of cases is not exceptional, and the apparently large number of cases found is due to the detection of early cases of mouth and appendix infections.

When considering the mortality amongst the Middlesex cases, the fact of early operation, and consequent discovery of the nature of the infection, must be kept in mind. Amongst the 40 cases of infection of parts about the mouth only a single death is known to have occurred. In this case, an abscess in the parotid region broke externally, and caused a progressive infection of the subcutaneous tissue of the right side of the neck and thorax; death resulted from lung complications. None of the other 39 cases died whilst attending the hospital; most of the cases presented single and comparatively small abscesses in the cheek, or neck, or about the fang of a tooth. In some of the cases, however, there was progressive infection of the subcutaneous tissue of the neck; but in most the suppuration remained localised.

Amongst the 20 cases of appendix infection there were six deaths. In one case infection of the retroperitoneal tissue with prolonged suppuration occurred, and death happened about six months after the operation. In another case jaundice appeared 10 days after operation and death occurred 16 days later, with suppurative thrombosis of the superior mesenteric, splenic, and portal veins. In a third case death followed a suppurative thrombosis of the portal vein some seven weeks after an operation; in both of these cases the streptothrix was present in large quantities in the veins. A fourth case died 22 days after operation, again with thrombosis of the portal vein. In the sixth case there was no examination after death, the exact cause of which remained uncertain. The remaining 14 cases were discharged from hospital as either cured or improved. The only after-history obtained was in a case which had been discharged as apparently cured, but which came back to the hospital some months later with a sinus discharging pus, from which the streptothrix was again isolated.

Of the 14 cases of lung infection, 9 are known to have died, 2 were sent from the hospital to workhouse infirmaries in a hopeless condition, and the result in one case is not known. Of the two remaining cases of lung infection, one is believed to have been cured; and in the other the progress of the disease appeared to have been, at any rate, arrested.

The cured case was that of a young girl, who was admitted under the care of Sir Alfred Pearce Gould, with an abscess in the upper part of the left breast. On incising the abscess a quantity of pus, with a pronounced fæcal odour, was evacuated, and a streptothrix was obtained in pure culture. There were no physical signs of disease of the lung; but, in view of the finding, a further exploratory operation was carried out, and a sinus was found leading through an intercostal space into a small cavity in the underlying lung. This was dealt with, but a discharging sinus remained for more than a year, and ultimately healed with apparent complete recovery under treatment with large doses of iodide of potassium.

The other case was that of a stable foreman who came under the care of Dr. H. Campbell Thomson with an attack of hæmoptysis. The patient presented an excavated ulcer on the dorsum of the tongue; and there was an area of deep-seated dulness towards the front of the upper lobe of the left lung. A small opaque patch was located by radiography in the position indicated by the area of lung dulness, but otherwise there were not any signs of lung disease. Repeated scraping of the ulcer of the tongue failed to afford any evidence of streptothrix infection; but the sputum contained large quantities of a streptothrix parasite which was obtained in culture on several occasions. A vaccine was prepared from the streptothrix, and the specific treatment was carried out for many months. The patient's general condition improved, and as later he appeared to be perfectly well the vaccine treatment was discontinued. All evidence of presence of the parasite had disappeared from the sputum; but apparently there was still a small indefinite area of dulness in the lung.

Of the remaining cases on the list the only one which is known to have proved fatal was one in which there was accidental infection of the peritoneum in the course of an operation for appendicostomy, carried out for feeding purposes in a patient with an annular malignant stricture of the œsophagus. The patient died 24 days after the operation, and at the subsequent examination a condition of the peritoneum resembling exactly a miliary tuberculosis was found, with a dense aggregation of tubercles round the site of the implanted appendix. An acid-fast species—*Streptothrix eppingeri*—was isolated in pure culture from a number of the tubercles. This particular species has been identified by others in five published cases, and the circumstances under which infection occurred in one of these cases were curiously similar to those just mentioned. The case is one recorded by McCallum in the United States; the patient was a child on whom an operation of gastrostomy had been performed for a non-malignant stricture of the œsophagus. In this case death occurred 23 days after the operation, and a similar condition of the peritoneum was found. It seems to be clear that in each case there was an accidental infection of the peritoneum at the time of the operation—a consideration

which suggests that the organism in question may be widely distributed in the air or in dust.

As to method of pathogenic action, it would appear that two distinct classes of parasites may be recognised, and that the pathogenic action of each class may be differentiated on broad lines. I have pointed out that the streptotricheæ may be differentiated roughly, from the laboratory point of view, into two classes according to the character of their growth on artificial media. There is what may be termed the saprophytic type of streptothrix, which grows freely on artificial media, which presents the typical life-cycle when so growing, and which has in culture the typical appearance, and often the characteristic smell, of a mould. Judging from what one knows of the history of cases of comparatively early infection, streptotricheæ of this kind do not produce any very active toxins. They are injurious because of a progressive destruction of tissue, and in that they, and especially when infecting the lung, prepare the way for secondary infection by pyogenic organisms which form active toxins. The progress of an infection by a parasite of this class is such as is generally recognised as being characteristic of streptothrix infections. That is to say, the progress of infection proceeds either through contiguous tissues or by direct continuity of tissues. This method of pathogenic action was obvious in many of the cases which have been under observation at the Middlesex Hospital. An abscess in the substance of the cheek will first make its way to the surface, and then the parasite will track slowly and continuously down the subcutaneous tissue of the neck without, as a rule, extending to deeper parts. Similarly, with a lung infection the parasite will spread by continuity of tissue until it has reached the pleural surface of the lung. The two surfaces of the pleural sac then become adherent; the parasite grows across the adherent surfaces, and through an intercostal space. Having established itself in the subcutaneous tissue, the streptothrix next invades the plane of subcutaneous connective tissue, as in the case of the mouth infection. In one of the cases of the Middlesex series the parasite, having perforated a left intercostal space in front, spread downwards on the left side of the body as low as the umbilicus, and upwards, backwards over the shoulder, and then downwards to the level of the lower angle of the left scapula. In most cases apparently the skin itself is directly infected only in a slight degree, except that it is punctuated here and there by small ulcers which mark the sites of discharge of small abscesses which have formed in the subcutaneous tissue. Except for this, the skin is not directly affected; its commonly observed dusky appearance in these cases is secondary to changes in the subcutaneous tissue. There is, as a rule, no spreading surface ulceration such as might be expected as a result of skin infection. And consequently, in cured cases of the kind, the cicatricial contraction is of the subcutaneous tissue, and not of the skin itself. This tendency to subcutaneous spread of infection is noticeable in other mycoses. In experimental sporotrichosis, for instance, a subcutaneous inoculation of the special parasite is followed by a slow and progressive infection of the subcutaneous connective tissue, with little tendency to extension either to the epidermis above, or to deeper tracts of tissue until the later stages of the infection. In infections by this class of streptotricheæ—and apparently a large number of cases of appendix infection and of pulmonary streptotrichosis are thus caused—there is at first but little tendency to diffusion of infection by means of either the blood or the lymph stream. It is only in far-advanced cases of infection by this class of organism that secondary infection of parts remote from the site of primary infection is frequent. And, in view of the apparent frequency of liver infection, as set out in the notes of published cases, it would appear to be probable that such liver infection is often a result of invasion of the tributary veins of the portal system in cases of appendicitis by direct extension of the growth of the parasite through the walls of the vessels.

With regard to the second class of streptotricheæ we have now to consider the method of action of a different kind of pathogenic parasite. We have to consider the action of parasites which may be rapidly disseminated through the tissues by the lymph or blood stream. And, as the second class of parasites differ from the other class in their method of pathogenic action, so they are usually differentiated from the others also by their biological characteristics. With them the "mould" type is less strongly pronounced; and the species are, as a rule, difficult of growth on artificial media. And growth when obtainable on artificial media is often slow and uncertain. Also, under the conditions of culture on artificial media these organisms are likely to be mistaken for pleomorphic bacilli. The now recognised *Streptothrix lepræ* may be taken as a type of this class of streptotricheæ; and Koch's *B. tuberculosis* is believed by some of us to occupy a like position.

But apart from cases recognised as cases of tuberculosis or as cases of leprosy, a considerable number of cases of generalised infection by steptotricheæ of the type referred to have been recorded; and it appears probable that other cases of the kind may not infrequently be mistaken for cases of tuberculosis. The difficulty arises from two sources. In the first place, the lesions occurring in this kind of infection may be indistinguishable anatomically from lesions which are commonly believed to be characteristic of infection by Koch's bacillus; and in the second place, the identification by laboratory methods of the true nature of the causative parasite is often a matter of extreme difficulty. Not only are streptotricheæ of this class frequently difficult of growth on artificial media but often the mycelial form of the organism is rapidly transient. Fragmentation of the mycelium and sporulation occur very rapidly, and so the true mycelial characteristics of the organism escape observation. Several species of streptotricheæ of this type are acid-fast when stained by the Ziehl-Neelsen method; and whether by the anatomical features of the lesions which they cause or by their morphology when growing on artificial media are practically indistinguishable from Koch's *B. tuberculosis*. So far as we know, the differentiation for practical purposes can be arrived at only by observation of the character of the growth on artificial media—which growth is, as already stated, often difficult to obtain—and, in some cases, by difference in pathogenic action for inoculated animals.

With regard to the ordinary paths of infection of pathogenic streptotricheæ, it would appear that in many cases the infection originates in the growth of the parasite along a natural duct, with subsequent invasion of contiguous parts. This method of establishment appears to be the rule in cases of infection of parts about the mouth, and in cases of streptotrichial appendicitis. In the former group of infections the occasional establishment of a streptothrix by entry into the tissues along sinuses or passages connected with carious teeth is also certain from clinical observation. In the case of mouth infections, passage of the parasite along the ducts of the salivary glands is suggested by the frequency of abscesses along the course of the duct of the parotid gland, and in the situation of the gland itself. Attention has been specially called to this point by Mr. T. Kellock; and the frequency of streptotrichial abscess in the situation of the parotid and sublingual glands is also strongly suggestive of this route of infection. In one case, under the care of Mr. Somerville Hastings at the Middlesex Hospital, there was an abscess in the cheek which was situated along the course of the parotid duct, and pressure along the duct caused the discharge of drops of pus from which the parasite was obtained in pure culture. In other cases of mouth infection, and especially in lesions on the dorsum of the tongue which occur occasionally in man and which are common in cattle, the parasite enters the tissue through accidental abrasions of the mucous membrane, which in cattle are probably caused by the temporary lodgment of ears of infected grain. The crypts of the tonsil also afford opportunity for the establishment of the parasite in both man and cattle. Pulmonary infection appears to result, as in the case of chronic pulmonary tuberculosis, from the inhalation of infected dust; and the special liability to infection of those who habitually inhale dust derived from vegetable products has been referred to. No comment is necessary on the considerable proportion of cases of early infection of the canal of the appendix cæci which is shown in the Middlesex series. Another possible route of infection is to the liver by the common bile duct; but it is probable that in a large number of advanced cases, with multiplicity of lesions, the liver has been regarded as the original seat of infection when the primary infection was really of the appendix, with secondary infection of the liver by the portal vein route.

The last point which has to be mentioned is the difficulty of accurate diagnosis in these cases. In very many

cases an exact diagnosis on clinical evidence is impossible. After one has excepted cases in which the occurrence of an abscess about the mouth raises suspicion of a possible streptotrichial infection, and advanced cases in which there has been a progressive infection of the subcutaneous tissue with characteristic appearances on the surface, there are no means for the differentiation clinically of streptotrichosis from many other kinds of infection. In pulmonary infections the clinical symptoms and signs are those of chronic phthisis; and it is only the occasional perforation of an intercostal space, with possibly subcutaneous extension of the infection, which may help in differentiating a case from one of pulmonary infection by Koch's parasite. In the latter infection, however, perforation of the chest wall is probably of extremely rare occurrence. And it may be added that in only one of the 14 cases of pulmonary streptotrichosis examined at the hospital was there any suggestion that the disease was other than an ordinary tubercular phthisis, until suspicion was raised by failure to find typical "tubercle bacilli" in the sputum, or until typical mycelial forms of a non-acid-fast streptothrix had been identified in the sputum. Equally, a diagnosis by clinical methods of the specific kind of infection is impossible in acute streptotrichial infection of the appendix, or in any case unless there has been extension to the subcutaneous tissue. In the case of mouth infections, whilst there is nothing characteristic about the local abscesses which form in the cheek or neck, the situation of the swelling, and sometimes the occupation of the patient, may suggest a diagnosis.

And whilst clinical diagnosis as to the special kind of infection is impossible in the majority of cases of streptotrichosis, the difficulties in the way of the positive identification of the parasite by laboratory methods are frequently considerable. These difficulties arise from two sources: in the first place there is the extreme difficulty of obtaining growth of many parasites of this class on artificial media, and in the second place there is the difficulty arising out of the varying morphology of these species of moulds at different phases of their life-cycle. It is now well-recognised that the mycelial, or "ray fungus" form, represents only one of the three forms under which these parasites occur; and this typical mycelium, and the mycelium when in the earlier stages of "fragmentation" it is breaking up into "rod forms," represent the only stage at which the parasite can be recognised positively by microscopic examination. At a later stage of development, when fragmentation of the mycelium is complete, and when sporulation has occurred, the picture is no longer that of a "ray fungus"—all that can be seen in a stained film is a collection of somewhat irregular "bacillary" forms, and spherical spores which exactly resemble the common pus cocci; and both forms stain deeply with Gram's method. The difficulty in practice may be illustrated by reference to what is often found on the examination of the exudation in cases of appendicitis. A film stained by Gram's method shows a dense collection of deeply stained spherical and rod forms, together with, or without, bacillary forms which do not stain by Gram's method and which probably prove on culture to be *B. coli communis*. But in a quite large proportion of such cases growth of either of the Gram-stained organisms cannot be obtained. This failure to obtain growth is, in itself, a reason for suspecting that the spherical forms do not represent cocci, since none of the known Gram-staining pathogenic cocci are difficult of growth on artificial media. Suspicion will be increased by the presence of largish masses of minute Gram-staining particles, which probably represent the débris of degenerated masses of mycelium. But these appearances merely give rise to suspicion; positive identification such as is necessary for statistical purposes is impossible unless definite, branched, mycelial filaments which stain by Gram's method are found, or unless the identity of the parasite is established by culture. And it is for this reason that I believe that cases of infection by streptotricheæ are very frequently overlooked; and this is why it appears probable that our own statistics at the Middlesex Hospital understate the frequency of occurrence of streptotrichoses.

In the case of the acid-fast species the difficulty, without successful culture, is still greater, since their appearance as they occur in morbid material may be identical with that of either branching or plain rod forms of the variety of strains, or species, recognised under the name of *B. tuberculosis*—a difficulty which is readily explainable if it is true that what is ordinarily recognised in clinical practice as tuberculosis includes, in fact, one or more specific varieties of streptotrichosis. The difficulty, and in this particular case its solution, may be illustrated by a comparison of one well-defined species, *Streptothrix eppingeri*, with the common strain of Koch's bacillus. The lesions, those of a grey miliary tuberculosis, produced by either may be identical, both to the naked eye and histologically under microscopic examination. Both micro-organisms stain by Gram's method; both acquire acid-fast staining properties with age, but *B. tuberculosis* earlier and more extensively than the other. But the growth of Eppinger's streptothrix on artificial media is much more rapid than that of the tubercle bacillus, and is of quite different appearance; moreover, its pathogenicity for the rabbit is very much more active—death, with a widespread peritoneal tuberculosis, following within a few days of an intraperitoneal injection.

## A NOTE ON REMISSION IN A CASE OF EPILEPSY.

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A GIRL, aged 4 years, attended Westminster Hospital in April, 1910, for epileptic fits, of which she had had three in ten days and had bitten her tongue. The maternal grandfather had had senile fits and had been intemperate in alcohol, but there was no other family history of nervous disease. The child had had no former attacks and no convulsions in babyhood; the only previous illnesses had been scarlet fever and chicken-pox, both shortly before the onset of fits. No abnormalities were found in the nervous system, and the child was not degenerate in type.

In May, 1910, attacks of petit mal developed, and the child became "dazed" for long periods together. She was treated with potassium bromide in the routine manner, and in the subsequent months fits were recorded as follows: 1910.—July: Frequent minor fits. August: Five major fits; also minor fits. September: Four major fits; minor fits. October: One major fit; constant minor fits. November: Three major fits in sleep; very frequent minor fits. December: No major fit; minor fits very frequent. 1911.—January: No major fit; no minor fit for four days (the longest period of freedom since the onset); minor fits on other days. February: Three major fits; frequent minor fits.

In March, 1911, the child had pneumonia and was ill for eight weeks, and, as often happens in acute infections in epileptics, during this time the fits were in abeyance. There was some recurrence when the pneumonia was over, but after convalescence was established the fits completely ceased, and for the following year during which she was under observation there was no recurrence.

The point of interest in the case is this cessation of fits after pneumonia, which appears to be an uncommon event, for the better known English and American writers on epilepsy make no mention of recovery following acute disease. The cessation of fits under these circumstances raises some interesting points. It occasionally happens that a chronic disease is apparently cured by an acute one. The writer is aware of a case of chronic tropical dysentery of some years' standing in a retired officer of the Indian Medical Service which abruptly ceased after an attack of pneumonia; further, it is well known that trachoma is sometimes cured after erysipelas, and sarcomata have been observed to shrink after the same infection.

Attempts, sometimes successful, have been made to turn these observations to practical account. The older text-books on ophthalmology mention the deliberate infection of the conjunctiva with pus in the treatment of trachoma, and inoculation with jequirity or its toxin is still occasionally practised. Coley's fluid is a preparation of streptococcal and other bacterial toxins used in the treatment of sarcomata. If such recoveries, whether natural or induced, are more than coincidences the facts are exceedingly interesting, since they imply that immunity to one infection has arisen

out of recovery from another, an occurrence of which the accepted theories of immunity offer no explanation.

Epilepsy occurs in two types of individuals—the degenerate type and the type otherwise physically normal. The former have various stigmata, such as arched palates and simian hands, and the latter are not distinguishable anatomically from healthy persons. The degenerate type are always to be regarded as potential epileptics, and any strain may precipitate the attacks, such as physical stress, as in campaigning, or acute illnesses. Attacks of the exanthemata often immediately precede the onset of fits in persons of this type. Also, in epileptics of non-degenerate type an attack of one of the acute fevers often appears to be the exciting cause of fits, and in the case under consideration the fits came on after scarlet fever.

These cases are not strictly comparable with the former. It seems probable, and many neurologists are of opinion, that such fits are due to the scars left by an encephalitis. If that is so, the fits following the exanthemata in non-degenerate persons are due to an infective condition, and the recovery in this case after another acute disease suggests that the fits may be due less to scars than to chronic infection. If a symptom such as epilepsy occurs in a person of normal development after an infective disease, it is a reasonable inference that the fits are infective or post-infective in origin; and if as a consequence of a second acute disease the symptom disappears, some support is given to the probability of its infective nature.

This case is of interest as an instance of an unusual event in an epileptic's history, as being suggestive of the infective nature of some kinds of epilepsy, and as being a possible instance of an obscure process of immunity.

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## A CASE OF OSTEOMALACIA.

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SURGEON TO NOTTINGHAM HOSPITAL FOR WOMEN.

OSTEOMALACIA is rare enough in this country to make this case, perhaps, worthy of record.

On June 14th, 1910, the patient, a married woman aged 34, small and severely deformed, was carried into the out-patient room of the Nottingham Hospital for Women. This was her history. Seven years previously, being then "as straight as anybody" and two inches taller than at present, she was married. Her first child was born nearly three years later—a girl, three weeks premature, weighing 4½ lb.; parturition normal. This child is now living and healthy. During her pregnancy the patient felt a good deal of backache, but no deformity was noticed. She was able to feed her baby partially for nine months. Soon after the confinement, however, obvious curvature of the spine was seen, and weakness and pain in the back increased gradually. In 1908 she was treated for some weeks as an in-patient of Derby Royal Infirmary. Massage and electricity, as well as rest, &c., brought about much improvement for a time. Towards the end of December, 1909, the pain and weakness returned, but in February, 1910, she became pregnant. She had never miscarried, and there had been no symptoms pointing to syphilis or any other disease except that in 1904, one year after marriage, she had been in bed a fortnight with "bad pains in the inside," supposed to have had some connexion with bad smells. This was two years before the birth of her first child.

On admission the condition of the patient was pitiable. She stood with difficulty, and a combination of severe lordosis with scoliosis made the abdomen extremely prominent. There was apparent narrowing of the space between the ischial tuberosities. Marked superficial tenderness made all examination difficult. She was taken into the hospital for a few weeks for observation and nursing, the diagnosis being osteomalacia. On vaginal examination the ischial bones and rami were pressed inward, and the pelvic outlet only admitted two fingers. The uterus was high, and pregnant about four and a half months. There was marked asymmetry of the pelvis, the left side being the smaller.

Pelvimetric measurements taken twice over on July 2nd showed 3 cm. (nearly 1½ in.) difference between the two sides in the distance from the mid-point of the iliac crest to the mid-point of the top of the sacrum. The inter-trochanteric distance was only 24·5 cm, the normal average being 31 cm. The anterior interspinous distance was 21·5 cm. and the intercristal 27 cm. The deformity was therefore not rachitic. The conjugate diameters could not be taken accurately, partly because of the deformity of the outlet and partly because of the extreme tenderness of the whole body. This was so great that the nurses could not lift the patient with their hands, and even being raised or rolled over in a sheet was painful. It was ascertained that the contraction was not chiefly at the pelvic brim and, as the measurements indicated, that the pelvis was oblique with an approach to the triradiate form. The bones were not palpably soft in ordinary examination. The extreme tenderness was a striking feature of the case, especially as the patient afterward proved not to be neurotic.

The patient remained in hospital a few weeks, and then, after consultation with my colleagues, I sent her to her home in the country, and to the care of Dr. J. J. Tobin, of Ilkeston, with directions to return early in November for Cæsarean section. This, of course, was with the full knowledge and consent of the patient and her husband. On Nov. 9th labour set in, with strong ineffectual pains. I therefore, with the kind assistance of my colleagues, Dr. C. V. Taylor and Dr. W. R. Smith, Dr. J. Watson giving the anæsthetic, performed a radical operation, first extracting the child (a boy, 3⅛ lb.) and placenta, and then removing the uterus, tubes, and ovaries. There was considerable hæmorrhage and the patient was much collapsed at the end of the operation. She made an excellent recovery and left the hospital in December.

The child lived only three months; but the mother improved steadily, so that in April, 1911, she came to a clinical meeting at the Nottingham Medico-Chirurgical Society, and seemed well pleased with the amount of attention she received. Last September, 22 months after the operation, I saw her again. She looked well and strong, and though she still stooped a good deal her appearance did not strike one as deformed. She said she felt that she held herself more upright as time went on. She was doing all her housework. The only unsatisfactory point was the existence of a small abdominal hernia which could easily be cured. The abdominal walls had been so pendulous and atonic that the hernia did not surprise me.

As to the causation of this case I can offer no suggestion. The patient is the wife of a well-to-do working man, and when the disease came on she was living in a healthy district in Derbyshire. Except by operation she had no special treatment. Nursing, good food, and tonics were, of course, given. But the cure was obviously due entirely to the operation, which brought about at the same time the cessation of pregnancy and the removal of noxious material from some part of the genital organs.

The following measurements, showing certain bony changes, may be regarded as confirming the diagnosis. They were taken in exactly the same way, with the assistance of the same sister on each occasion. The measurements were made (1) on July 2nd, 1910, and (2) on April 11th, 1911. Distance between iliac crests (1) 27 cm., (2) 25 cm. Distance between trochanters (1) 24·5 cm., (2) 23 cm. Distance from mid-point of iliac crest to mid-point of top of sacrum (1) R., 18 cm., L., 15 cm., (2) same distance each side 14·5 cm. The other measurements showed slighter differences.

Nottingham.

## CONGENITAL ABSENCE OF BOTH THUMBS.

BY J. H. SEQUEIRA, M.D. LOND., F.R.C.P. LOND., F.R.C.S. ENG.,
PHYSICIAN TO THE SKIN DEPARTMENT AND LECTURER ON DERMATOLOGY AT THE LONDON HOSPITAL; CONSULTING DERMATOLOGIST TO THE RADIUM INSTITUTE.

COMPLETE absence of both thumbs is an exceedingly rare malformation, and the case I now report possesses several points of great interest, which render it worthy of a detailed record.

The patient, a young Polish Jew, presented himself in the Skin Department of the London Hospital on Dec. 19th, 1912, for treatment of a Hunterian chancre. He was 19 years of age and he was born without thumbs. He was a short, slenderly built man, healthy in all other respects, but,

owing to his deformity, he was obliged to get his living by running errands and carrying parcels. The appearance of the hands is shown in Fig. 1. It will be noticed that, in addition to the complete absence of the thumb on each side, there is shortening of each little finger. The thenar eminence was absent on each side, and the forearms were thin and slender, the musculature on the radial side being obviously ill-developed. No trace of the tendons of the thumb extensors was to be felt on the radial side of the

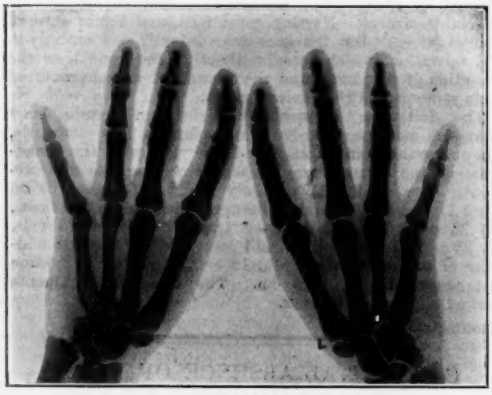
FIG. 1.

From a photograph of the patient's hands.

wrist. The movements of the fingers were normal, but the shortness of the penultimate phalanx of each little finger caused a peculiar doubling of those digits on flexion.

I had a radiogram taken (Fig. 2), and my colleague, Dr. Gilbert Scott, kindly examined it with me. It showed that the distal end of each radius was very narrow, and articulated with the semilunar bone and the os magnum. The scaphoid and trapezium and the metacarpal and phalanges of the thumb were absent. The scaphoid being absent, the os magnum articulated with the lower end of the radius.

FIG. 2.



From a skiagram of the patient's hands.

The penultimate phalanx of each little finger was very short. There was no trace of an epiphyseal line in any of the metacarpals and phalanges. According to the anatomical text-books these epiphyses become consolidated in the twentieth year.

Professor Keith informs me that this deformity is one of a series beginning with a slight malformation of the thumb, and ending with complete absence of the radius and radial digits. It is interesting to note that the scaphoid and trapezium were both absent, and this demonstrates that the scaphoid is the thumb element in the proximal row of the carpus.

Manchester-square, W.

# A CASE OF ACUTE INTESTINAL OBSTRUCTION FOLLOWING CÆSAREAN SECTION.

BY J. BRIGHT BANISTER, M.D., B.C. CANTAB., M.R.C.P. LOND.,

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THE somewhat unusual sequence of events in the following case seems to afford sufficient excuse for reporting it.

The patient was a primigravida, aged 39 years, who was sent in from the out-patient department at Queen Charlotte's Hospital on Nov. 15th, 1912. She was, by calculation, ten days over full time, and the child was in a podalic lie. Her age and the estimated size of the baby were factors which suggested external version and the immediate induction of labour in the interests of the child.

The breech was well above the pelvic brim when I saw her, and external version was very easily carried out, suggesting that there might be some pelvic contraction. This suspicion was abundantly verified upon pelvic examination, the diagonal conjugate being found to be just under 3½ inches and the whole pelvic brim easily palpable. The alternatives of perforation and Cæsarean section were therefore put before the patient, and she chose the latter. The operation was done the same day and presented no special features. The child was alive and weighed 7 lb. 10 oz.

For three days after operation progress was in every way satisfactory, the bowels being opened on the second and third day, and a good quantity of flatus passed. On Nov. 18th the patient became somewhat distended and complained of abdominal pain. The bowels were not opened, although salts and an enema were given. The pulse and temperature were normal, but she vomited slightly that evening. On the 19th the distension was much more marked, and the pain became very distressing. Vomiting occurred on three occasions, and was somewhat intestinal in character and smell. When I saw her at 6.30 P.M. she was very restless, the pulse 94, and the temperature 98° F. She complained of persistent abdominal pain. The abdomen was distended all over, was tympanitic and very tender. Marked peristalsis was seen across the epigastrium, the wave passing from right to left. The abdominal wound looked perfectly healthy, but straw-coloured serum was oozing from the lower angle. Absolute constipation had persisted for 36 hours.

The extreme distension and the complete constipation following the normal post-operative clearing of the intestinal tract suggested an acute obstruction low in the colon, but I was at a loss to explain the occurrence in this situation after an uncomplicated Cæsarean operation, unless the involuting uterus had blocked the small pelvic brim. I reopened the abdomen at 9 o'clock the same evening, and found that the abdominal wound was perfectly healthy and that there were no adhesions thereto. The uterus had so far involuted that the stitches in the uterine wound could no longer be seen, the fundus being about half an inch above the symphysis. Some straw-coloured serum welled up from the abdominal cavity, but the intestines were only very moderately injected.

Enlarging the wound above the umbilicus I found the transverse colon distended to about the circumference of a moderately full stomach, and, on passing the hand along, the distension was observed to continue up into the region of the spleen, while the descending colon was felt to be collapsed throughout its extent. To obtain a view of the condition the small intestines were withdrawn from the abdomen and covered with a warm towel, and the distended colon was now seen more clearly. The distension affected the whole flexure, the gut passing up under the cupola of the diaphragm and then curling on itself, while from beneath the distended mass the collapsed part of the colon was seen to issue. At the distal end of the distended portion a taut lieno-colic band was found fixing the gut down. Such was the distension that there were three large tears in the peritoneal coat, and it was impossible to undo the partial twist before reducing the calibre of the bowel. This was effected by incising the middle of the transverse colon, when large

quantities of gas and liquid fæces poured away. The distension relieved, the hole was clamped with ovum forceps and the splenic twist undone, after which the descending colon immediately filled up. The injury to the bowel was then repaired by two layers of fine silk sutures, the pelvis drained by a tube passing to the floor of the pouch of Douglas, and the wound closed in one layer. The patient stood the operation very well, her pulse being 110 on her return to the ward. During the next 24 hours the bowels were opened four times, and the distension became much less. Serum escaped freely from the drainage-tube.

The convalescence was interrupted by two circumstances. Three days later she had a sharp attack of pulmonary congestion, with a marked rise of temperature to 104°, a respiration rate of 40, and a pulse of 120. On examination numerous moist sounds were heard over both lungs and one or two small areas of consolidation were discovered. This condition improved in 48 hours. The second circumstance giving rise to anxiety was the passage of about 10 oz. of blood from the rectum preceded by several sloughs. This occurred on the eighth day. Her pulse rose to 114 and the temperature fell to 96°, and she appeared much collapsed. Two more slight hæmorrhages occurred and another slough was passed, but the temperature and pulse were normal again on the twelfth day after the second operation, and from then progress was normal. The patient left hospital with her baby four weeks after admission.

The condition found at the second operation seemed to suggest that the band had held the colon somewhat tightly to the abdominal wall just below the splenic flexure, and I wondered whether this had caused any symptoms previously. On questioning the patient she said that she had suffered markedly from flatulence for many years, and that she had had colicky pain in the upper part of the abdomen on several occasions which were usually followed by the passage of flatus. She had, in addition, had to take salts regularly twice a week for several years. Whether this history is to be taken as throwing any light upon the condition I am doubtful, for the patient seemed very desirous of helping me as much as she could in the matter. My impression is, however, that she had an old-standing partial kink just below the splenic flexure, and that the distension which so commonly follows the removal of a large tumour from the abdomen was sufficient to produce an acute kink at the point where the intestine was anchored.

Welbeck-street, W.

THE REGISTRATION OF PLUMBERS.—At the Town Hall, Stratford, on Jan. 21st, under the presidency of the mayor of West Ham, Mr. Alderman Spittle, a meeting of plumbers, sanitary officers, and others was held, at which a lecture, one of a course, was given on Sanitary and Domestic Hot Water Work by Mr. Fretwell, teacher of plumbing at the L.C.C. School of Building, Brixton. The lecture, which was well received by a large and appreciative audience, was highly interesting, some instructive charts and tables being introduced. The mayor, speaking as a plumber, in opening the meeting, testified to the excellent work done by the Worshipful Company of Plumbers in promoting efficiency in the craft they represent, and urged the great need for the revival of the system of apprenticeship, and also of a still keener interest in technical education on the part of the men engaged in the trade. After a vote of thanks to the lecturer had been moved by Mr. Councillor Warwick, deputy mayor of East Ham, himself a member of the London Council, Mr. Smeaton, secretary to the General Council, gave a short account of the registration movement, its educational work and efforts towards apprenticeship, and explained the system introduced of marking the work of registered men. The mayor then presented certificates to the candidates who were successful in passing the examination at King's College, Strand. Mr. W. Benton, medical officer of health of East Ham, after speaking of the great importance to health of efficiency on the part of the plumber, moved that copies of these lectures should be circulated as widely as possible. This was seconded by Mr. W. Brook, an operative plumber. Following a vote of thanks to the mayor the meeting closed.

# Medical Societies.

## ROYAL SOCIETY OF MEDICINE.

### SECTION OF THE HISTORY OF MEDICINE.

*Medical Allusions in the Writings of Francis Bacon.—Plague Banners.—Some Oddities in Nomenclature.—Eighteenth Century Obstetric Forceps.*

A MEETING of this section was held on Jan. 29th, Sir WILLIAM OSLER, the President, being in the chair. Sir W. T. Thiselton Dyer, the Right Reverend Francis Aidan Gasquet, Mr. A. Rudolf Hoernle, Mr. Charles Louis Taylor, Mr. H. S. Wellcome, and Mr. Sidney Young were elected corresponding Fellows as "persons who have distinguished themselves in the subjects for the study of which the section is established."

Dr. G. W. STEEVES read a paper upon Medical Allusions in the Writings of Francis Bacon. The subject was considered under the following heads: (1) Bacon's mental attitude towards the profession and the duties pertaining to it; (2) his views on public and domestic hygiene; (2) remarks on disease in general and special diseases; (4) medicines and special medical applications; (5) the special senses; and (6) generation, decay, and death.—The paper was discussed by Dr. RAYMOND H. P. CRAWFURD and Dr. LEONARD G. GUTHRIE.

Dr. CRAWFURD showed, by means of lantern slides in the epidiascope, some Plague Banners. He said that these banners were formerly carried in processions in times of plague. He traced back the custom of carrying such pictures in public as far back as the time of Gregory the Great at the end of the sixth century. He alluded to the many wonder-working Madonnas that abounded in Italy, and assigned them a place in the lineage of plague banners. He showed a fifteenth century fresco from the church of S. Pietro in Vincoli at Rome which depicted the carriage of a plague banner of the Madonna sheltering her suppliants beneath the folds of her robe. Passing to the gonfaloni of Perugia, he showed that such banners were not an exclusive product of the Umbrian school. They fell into three groups according as the central figure of the banner was the Madonna, Christ, or a plague saint, usually St. Sebastian, on account of his local veneration. Examples of each type were exhibited and the salient features explained.—Dr. SAMBON took part in the discussion.

Mr. B. GLANVILL CORNEY read a paper on Some Oddities in Nomenclature. He said that in Rio de Janeiro during the epidemics of influenza which occurred in 1777 and 1802–03 the disease was called "zamporinion" and "corcunda." He also cited an epidemic of dengue which ran through Brazil in 1847 and was called "polka" at Rio and "rabo aherto" at Bahia. The term "zamporinion" was adopted from the name of a Venetian singer who was popular at Rio at the time and had nothing to do with the Portuguese name for measles—sarampaõ, in Spanish sarampion—which was directly derived from the Greek in allusion to the bright colour of the rash. Corcunda meant hunchbacked and came into popular use because of the bent condition in which patients were left at the end of each paroxysm of cough which was said to be of a very spasmodic character and closely to resemble whooping-cough. Dengue was called "polka" because of a distinguished court beauty at Rio who was a native of Poland and was in great vogue at Bahia at the time of the epidemic. The same epidemic received the name "rabo aherto" because there chanced to be coincidently an unusual glut of the fish of that name. Mr. Corney advanced the theory that an epidemic of cerebro-spinal meningitis was coincident with the Bahia epidemic and that whooping-cough played a part in the corcunda attack. He also alluded to the older folk names for influenza—viz., "le tac," "the new delight," and the "jolly rant"—which have in turn displaced each other and have themselves been replaced by "the flue."

Mr. ALBAN DORAN demonstrated by means of the epidiascope some Eighteenth Century Obstetric Forceps. He showed:—Grégoire's forceps, a heavy instrument weighing 1 lb. 9 oz., measuring 17 in. in length, with no pelvic curve, but with fenestrated blades. It differs from Grégoire *fils*

original type in its simpler lock and in a mechanism to allow of one handle being used as a sharp crotchet, as in Fréke's instrument. It is uncertain if Grégoire devised this modification, since he never wrote on his own forceps, and Boehmer is the original literary authority. Orme-Lowder forceps: Very short, blades straight, broad, narrower at the free ends, which are 1⅝ inches apart when the handles are closed. The fenestræ are wide. The evidence again is that of contemporaries, because Orme left no writings; Lowder admitted Orme's priority in some manuscript lectures. Kühn wrote the first published description of Orme's forceps in 1783. Mulder, a pupil of Orme and Lowder, published important evidence and sketched their forceps himself. The inventors considered that the wide fenestræ and narrowing of the broad blades near their tips adapted the instrument to the fœtal head. Lowder rejected Orme's leather covering for the handles. Mulder and Kilian differ as to the extent of the leather covering in Orme's forceps. The instrument exhibited seems intermediate, being longer than Orme's and shorter than Lowder's, whilst the handles are lined with leather. There is a misstatement of Kühn as to appointments held by Orme and Lowder, as there is an absence of evidence in the records of Guy's Hospital that the latter ever held an appointment there. Haighton's forceps are an exaggeration of the main features in the Orme-Lowder type, but there is no description of his forceps in his manuscript lectures. Blundell, Haighton's nephew, notices Orme's and his uncle's forceps in his text-book, ignoring Lowder's. There is some uncertainty about the precise nature of variation in Haighton's instrument. Radford figures it. David Davis designed forceps with even wider fenestræ. Conquest's widely fenestrated forceps had a screw-joint in one handle. Osborn's Forceps: The instrument exhibited corresponds exactly to the drawing in the inventor's "Essays" (1792). A light forceps with relatively slender blades bearing a pelvic curve and broadest at the tips, which are three-quarters of an inch apart when closed. The whole instrument, including the fenestrae, is covered with leather. Mulder's contemporary evidence and Denman's own writings award the priority to Osborn. Denman's forceps were similar but the blades had no pelvic curve. Thynne made the blades proportionately longer according to Mulder; Thynne himself left no description of his modification in the abstract of his lectures.

## SECTION OF PSYCHIATRY.

*Insanity and the Neuropathic Inheritance.*

A MEETING of this section was held on Jan. 28th, Sir GEORGE H. SAVAGE, the President, being in the chair.

Dr. F. W. MOTT read a paper on Insanity and the Neuropathic Inheritance. He said there were individuals born of sound mental and physical stocks that no acquired conditions—e.g., disease, drink, poisons, either engendered within the body or taken from without, head injuries, emotional shock, distress and even profound misery and destitution combined—could render insane. There were others, and these were, in most cases, derived from a neuropathic stock, whose mental equilibrium might be disturbed by any one of these conditions or even without any apparent cause, except the physiological conditions appertaining to the functions of the sexual glands at puberty, during adolescence, the puerperium, lactation, and the climacteric period in women. Between these two extremes one found all gradations of mentality, from the congenital imbecile and the insane adolescent dement at one end of the scale to the potentially sound mind and body which no combination of acquired conditions could render permanently insane. Every case of insanity should be regarded as a biological problem, and the study resolved itself into the acquirement of a knowledge of what the individual was born with—nature—and what had happened after birth—nurture. The former of these could be ascertained by a study of the ancestral stocks. The neuropathic tendency might be manifested in different members of the stock in different ways. Just as bodily features were transmitted from one generation to another, so was temperament. Special racial and family characters were of later development, therefore were far less fixed, stable, and organised in the nervous system. Galton found that twins developed from one ovum, and therefore identical germ plasm, living in a different environment, remained similar in temperament and character; whilst dissimilar twins, brought up and living in the same environment, remained dissimilar. Galton also made a statistical inquiry into the inheritance of good and bad tempers, and concluded that one set of influences tended to mix good and bad at haphazard, another tended to assimilate them, another tended to divide families into contracted portions; and in that way there was a tendency to revert to the normal average of the race. Morel had pointed out that nervous, irritable weakness and neurasthenic predisposition might be the first evidence of degeneration of a stock. The signs of degeneracy might be manifested as self-centred narrow-mindedness in religious beliefs, fanaticism, mysticism, spiritism, and unwholesome contempt of traditional custom, social usages, and morality, a vain spirit of spurious art and culture, a false, self-loving vanity in the pursuit of a sentimental altruism, the intelligence being well preserved. Such qualities might be combined with latent or active genius; but the brilliant intellectual qualities of a degenerate were generally associated with either a lack of moral sense or of sound judgment and higher control. Dr. Mott declared that the world's history had been made by men who were either epileptics, insane, or born of a neuropathic stock: Alexander the Great, Julius Cæsar, Napoleon, Peter the Great, Frederick the Great, Pitt, Earl of Chatham, Mahomet, the Apostle Paul, Martin Luther, Emmanuel Swedenborg, and others. Among English poets, Cowper, Wordsworth, Byron, Gray, Burns, Chatterton, Thompson were either insane or possessed the neuropathic temperament. Dr. Mott then proceeded to describe the work which had been done in the pathological laboratories of the London county asylums on heredity in relation to insanity, chiefly by means of a card system which he instituted four years ago, the cases inquired into having reached 3118, concerning 1450 families. That showed the following facts: (1) In the insane offspring of insane parents daughters were much more numerous than sons; (2) amongst the insane members of the same family (brothers and sisters) sisters were more numerous than brothers, which fact might be usefully correlated with the further fact that there were more women in asylums than men. More than half the residents of the London county lunatic asylums had been secluded there more than ten years. Among the reasons for the preponderance of women inmates were that general paralysis, which was three times more frequent in men than in women, was a fatal disease; again, women were more likely to be insane because of the physiological emergencies connected with reproduction; moreover, women had a more unstable nervous system or mental equilibrium. To those factors must be added, in his opinion, the enforced suppression, by modern social conditions, of the reproductive functions and the maternal instinct in women of emotional temperament. Dr. Mott then proceeded to establish the principle of anticipation or antedating, and nature's means of mending or ending degenerate stock, showing a number of pedigrees, one of which exhibited the elimination of unsound elements in a stock in which there was a dual insane inheritance. It was generally admitted that in the pedigrees of general paralysis of the insane the neuropathic taint was not found to anything like the extent that it was in the pedigrees of patients suffering from neuroses, psychoses, and feeble-mindedness. This was not surprising, seeing that general paralysis was an organic disease due to the action of the syphilitic organism. He had been able to support his contentions by the investigation of upwards of 3000 relatives of persons admitted into the London county asylums.

Dr. E. M. WHITE demonstrated a number of very instructive Pedigree Charts and the manner in which the data were ascertained. It seemed to be the general rule that the abnormality on the mother's side was greater than that on the father's side.

The PRESIDENT referred to some cases within his experience in which a man, after a head injury, slowly became weak-minded, and the children, begotten after it, were also weak-minded. He also spoke of the alternation of neuroses, gout or asthma alternating with insanity in several cases he had seen, while glycosuria and insanity were said to behave in the same way. Diabetics sometimes had insane or epileptic offspring. Marriage between offspring of degenerate parents was not such a serious matter where the contracting parties did not

themselves show a neurotic taint as where that did exist. This presence or absence of a neurosis also entered largely into the question of whether cousins should marry.

Dr. ROBERT JONES took the histories of 100 cases of general paralysis, and found that in 28 per cent. there was a history of paralysis of some kind in the progenitors, in some of whom it was called "spinal paralysis"; he knew it was general paralysis in some. And there was a history of some member having been insane in 38 per cent.; while in 18 per cent. there was a history of drink in the parents. 12 per cent. gave a history of epilepsy, and 31 per cent. a history of tuberculosis. He considered that disorders of the ductless glands were responsible for much insanity. He believed in the transmissibility of general paralysis of the insane.

Dr. T. B. HYSLOP pointed out the protean character of conditions grouped as insanity, and the fact that in some cases the condition was due to a gross physical defect, such as in the thyroid gland; and he counselled caution in applying Dr. Mott's statistics in too sweeping a manner.

## MEDICAL SOCIETY OF LONDON.

*Exhibition of Clinical Cases and Pathological Specimens.*

A MEETING of this society was held on Jan. 27th, Sir WILLIAM WATSON CHEYNE, the President, being in the chair.

Dr. F. PARKES WEBER showed a case of Splenic Anæmia. The patient, a pale, dark-skinned woman, aged 30 years, was admitted under his care at the German Hospital on Oct. 16th, 1912, with chronic enlargement of the spleen and a leucopenic type of anæmia. Under treatment (with occasional intermissions) by arsenic—Fowler's solution, arsacetin, and finally neosalvarsan—the spleen had diminished in size, the anæmia had almost vanished, the patient had gained in body-weight, the menstrual flow had increased, and there had been a subjective sense of improvement. The conjunctivæ had lost their previously yellowish tinge, and the urine no longer gave the reactions for excess of urobilin and for urobilinogen which were at first present. The blood plasma was of medium yellow colour and apparently free from bilirubin. There was, perhaps, very slightly increased fragility of the red blood cells towards hypotonic salt solutions, hæmolysis taking place partially with 0·45, and completely with 0·4 per cent. aqueous solutions of sodium chloride. Wassermann's reaction negative. Dr. Parkes Weber believed that the case was one of a clinical group of cases of "splenic anæmia" in adults which improve under arsenical therapy and do not necessarily develop into typical cases of "Banti's disease," with hepatic cirrhosis and ascites. The existence of this group of "splenic anæmia" cases must be taken into consideration when estimating the results of the operation of splenectomy in *early* cases of "Banti's disease." As in cases of so-called "acquired chronic acholuric jaundice" with anæmia and splenomegaly, cases like the present one might (at all events, temporarily) show a subicteric tinge of the conjunctivæ, some excess of urobilin in the urine, and slightly increased fragility of the red blood corpuscles towards hypotonic saline solutions.

Dr. PARKES WEBER also showed a case illustrating a sequel of Acquired Chronic Acholuric Jaundice. It was probably a case of tertiary visceral syphilis with pyrexia and extreme cachexia. The patient was shown by Dr. Weber at the Medical Society of London on Feb. 8th, 1909, as "a case of acquired chronic acholuric jaundice with a blood picture at one time resembling that of pernicious anæmia." Examination of her blood on Jan. 31st, 1908, had given the following result:—Hæmoglobin (by Haldane's method), 18 per cent. of the normal; red cells only 900,000 in the cubic millimetre of blood; white corpuscles, 6000; colour index, 1. The differential count of the white cells gave:—Lymphocytes, 45·6 per cent.; intermediates, 4·8 per cent.; large hyalines, 2·4; neutrophile polymorphonuclears, 46·0; eosinophiles, 0·8; mast cells, 0·4. During the count of 500 white cells Dr. A. E. Boycott saw no ordinary normoblasts, but eight typical megaloblasts (gigantoblasts) of the pernicious anæmia type, and 16 smaller nucleated red cells, resembling the typical megaloblasts except in regard to their relatively small size. There were a few polychromatophilic red cells and many punctate basophilic red cells. Decided anisocytosis and poikilocytosis were present, as in pernicious anæmia. The blood picture at that time was one of typical "megaloblastic degeneration," but a striking feature was the association of chronic acholuric jaundice, and the case likewise differed from pernicious anæmia in regard to the enlargement of the spleen and liver. The liver extended two or three fingerbreadths below the ribs, and the spleen, which was hard, reached almost to the anterior superior iliac spine. In the treatment of the case the arsenical preparation known as atoxyl was especially employed, but the great improvement which ultimately followed could not with certainty be attributed to the atoxyl, as the period of the most decided improvement commenced a considerable time after the atoxyl treatment had been discontinued. In December, 1908, the blood showed nothing abnormal beyond slight anæmia. Since that time the condition had remained fairly good, and the patient had been able to do ordinary household work. On July 17th, 1911, the red cells numbered 5,330,000 to the cubic millimetre of blood. When exhibited the patient was suffering from interstitial keratitis of the right eye. This commenced about June, 1912, and was evidently regarded at an eye hospital as of syphilitic origin, for she was given an injection of salvarsan. There was again slight anæmia, but microscopical examination of blood films showed nothing abnormal. There was no excessive fragility of the red blood cells towards hypotonic saline solutions. The liver was apparently not enlarged. The spleen could just be felt below the costal margin. The conjunctivæ had a very slight yellowish tinge, and the reaction for urobilin in the urine was positive. The case certainly confirmed the remarks of Dr. G. R. Ward and other observers on the uncertain prognostic value (when considered by itself) of the blood-picture of the so-called "megaloblastic degeneration," which was at one time regarded as pathognomonic of pernicious anæmia. As to the cause and real nature of the severe and long-continued illness in 1908 there was still considerable doubt. Was acquired chronic acholuric jaundice with splenic enlargement and severe anæmia (like that from which this patient suffered) an independent disease of unknown etiology, or was it merely a clinical picture-type or symptom-complex, which might be due to various causes? In this connexion it was important to note that the patient's blood serum now (January, 1913) gave a positive Wassermann's reaction for syphilis and that she was suffering from interstitial keratitis. Tertiary syphilis might, indeed, occasionally give rise to an irregularly febrile condition, characterised by enlargement of the liver and spleen and accompanied by general cachexia and anæmia, from all of which symptoms this patient suffered in 1908. In all probability the entire illness of 1908 was of tertiary syphilitic origin. The atoxyl treatment in 1908 might, like the modern salvarsan treatment, though to a lesser extent, have exercised a decided anti-syphilitic effect.

Dr. J. L. BUNCH showed a case of Lupus Erythematosus in a girl aged 14, which demonstrated the good effects of treatment by carbon dioxide snow; and also a case of Syphilide resembling Tubercle in the neck and upper part of the thorax in a woman. She had been treated by local application of iodine for tuberculous glands in the neck, and afterwards, finding other small swellings in the same region, had treated herself in the same way. When first seen by Dr. Bunch a large ulcerated patch had resulted. This healed quickly under treated by potassium iodide internally.

Mr. PAUL B. ROTH showed a patient on whom he had successfully performed Transperitoneal Uretero-lithotomy. He said that in January, 1910, Mr. Sinclair White had published[1] a paper on Ureteral Calculi, and gave notes of two successful cases of transperitoneal uretero-lithotomy. His description of the operation was so clear, and the arguments which he advanced in its favour were so convincing, that he (Mr. Roth) determined to perform the operation on the first suitable case, which was the boy now shown. The patient, aged 8, was examined on Sept. 17th, 1912. He looked ill and delicate, and was said to have suffered from pain on passing urine for 18 months, the pain being felt over the lower abdomen, and occurring always at the beginning of the act. On four occasions in the urine there had been dark blood, which had covered the bottom of the chamber, the last occasion being three months

[1] Brit. Med. Jour., Jan. 1st, 1910.

previously. On these occasions there had been increased pain. There was apparently no increased frequency of micturition. Examination of the abdomen and of a specimen of the urine revealed nothing abnormal. A diagnosis of stone in the bladder was made. A week later the bladder was sounded under an anæsthetic, but no stone was felt. On Sept. 29th an X ray examination was carried out by Dr. W. Ironside Bruce, which showed the outline of the left kidney increased in size, and in the line of the left ureter about 3 inches from its vesical end, a small oval-shaped opacity suggesting an impacted ureteric calculus. Both those points were well demonstrated in radiograms. The boy was kept under observation, and on Nov. 8th he again passed some blood in the urine; it lasted slightly for two days. On this occasion there was no pain, but he felt "irritation of his privates." Operation was then decided upon, and was performed on Nov. 25th. After again sounding the bladder with negative result the patient was placed in the Trendelenburg position, and the lower abdomen opened by a vertical incision through the left rectus sheath. The intestines were packed out of the way with gauze and the rectum pushed over to the right. On introducing the fingers the stone was at once felt on the left side 1½ inches below the brim of the pelvis and apparently the same distance from the bladder. The left ureter appeared beneath the peritoneum as large as a piece of small intestine. As all attempts to push the stone up to the brim of the pelvis failed, the parietal peritoneum was incised above and the ureter isolated. A temporary ligature was placed round the proximal portion and the ureter itself raised up and packed round with gauze. A vertical incision was then made in it on its anterior aspect, about a drachm of urine escaping; a long-necked spoon was introduced, and at the second attempt the stone was dislodged and delivered through the opening. A probe was passed down to the bladder and up to the kidney, and, all being clear, the wound in the ureter was closed with four catgut Lembert sutures. The temporary ligature was removed and the divided peritoneum brought together over the ureter; the abdomen was closed without a drain. The operation lasted 50 minutes. In addition to the enormous hypertrophy and dilatation of the whole ureter there were marked thickening and induration of that part of it which had been occupied by the stone. Mr. Roth said it would have been better to have twisted the isolated ureter round and incised it on its posterior aspect; also the incision need not have been nearly so long. Neglect of these points might account for slight symptoms of peritonitis which occurred on the following day, the temperature rising to 100° F. and the abdomen becoming moderately distended. This latter was entirely relieved by a small soap-and-water enema, and the boy made an uninterrupted recovery. The wound healed by first intention, the stitches being removed on the tenth day. The stone was oval in shape, its diameters being 5/16ths and 7/16ths of an inch; it was composed of small, sparkling oxalate (?) crystals, which caused its external surface to be very rough and jagged. The extreme ease with which the operation was performed had led him to bring it to the notice of the society.

Mr. W. H. CLAYTON-GREENE showed a specimen of Hairball removed from the stomach. The patient, a young woman aged 23, had suffered from abdominal pain and vomiting, and a tumour had been felt in the upper part of the abdomen. A radiogram favoured the view that the swelling was gastric. By operation a large hairball was removed, which formed a cast of the stomach and duodenum. Another smaller portion was free in the stomach. Most of the hair was dark like her own, but some was fairer. After the operation it was first noticed that she was wearing a wig.

Mr. CLAYTON-GREENE also showed a specimen of a Peculiar Appendix. It formed a large cystic swelling in the right iliac region, which was removed together with small adjoining portions of the ileum and colon by operation. Subsequently it proved by naked-eye and microscopical examination to be a large mucocele of the appendix.

Dr. FREDERICK LANGMEAD exhibited the Suprarenal Glands removed from a boy, aged 10, who died from Addison's disease. Both glands consisted almost wholly of fibro-caseous tuberculous material. The heart was hypoplastic. It was shown because of the great variety of the disease in childhood.

Dr. T. S. LUKIS showed a case of Acholuric Jaundice in a boy aged 6½ years. He had been pale from birth, but had no jaundice during early infancy. Gastro-intestinal trouble and frequent bronchitis had been present. A tumour on the left side of the abdomen was first noticed by the mother before the child was one year old, and had persisted ever since. Jaundice was first noticed on Nov. 18th, 1911. He had been ill for four weeks, with pale motions and urine the colour of red ochre, and had been jaundiced on and off ever since. There was no family history of jaundice or splenic anæmia. On admission, Dec. 11th, 1912, the child was very anæmic, weak, and dyspnœic on exertion. The skin and mucous membranes were definitely jaundiced. The urine contained urobilin but no pigments or salts. The motions were normally coloured. The liver reached one finger's breadth below the costal margin. The spleen was markedly enlarged and firm. A blood examination on Dec. 11th showed: Red cells, 1,524,000; hæmoglobin, 25 per cent.; colour index, 0·8; white cells, 13,500; myelocytes, 3 per cent; nucleated red cells, 17 while counting 200 white; reticulated erythrocytes, 20 per cent.; fragility, 0·55. The patient's general condition had much improved under treatment with arsenic. The temperature had frequently been raised to 99·4° F., but never higher except during an attack of tonsillitis. The bowels were obstinately constipated. The Wassermann reaction was negative. A blood examination on Jan. 15th showed: Red cells, 2,200,000; hæmoglobin, 30 per cent.; colour index, 0·7; white cells, 19,700; myelocytes, 2 per cent.; nucleated red cells, 16 while counting 200 white; reticulated red cells, 14·6 per cent.; fragility, 0·55.

Mr. E. C. RAYNER showed, for Mr. C. A. BALLANCE, a case of Bony Tumour of the Femur in which a question arose as to whether the tumour was a simple osteoma or osteo-sarcoma.

## LIVERPOOL MEDICAL INSTITUTION.

*Fracture of Neck of Femur.—Acute Yellow Atrophy of the Liver.—Carcinoma of the Rectum.*

A MEETING of this society was held on Jan. 23rd, Mr. ROBERT JONES, the President, being in the chair.

Mr. RUSHTON PARKER read a note on Fracture of Neck of Femur, and showed specimens from two cases, also lantern slides. One case was from a patient, 82 years of age, who died ten days after the injury. The other patient was 72, and died ten weeks after the injury. The specimen showed true bony union. Mr. Parker said he preferred to treat them on a "Thomas" hip splint, though in some cases the "Thomas" knee splint answered.—The PRESIDENT said the specimens were worthy of attention, as the possibility of bony union was denied. In making the initial diagnosis an injury to the hip which produced eversion of the foot and some loss of power in the leg was quite sufficient. In treating these cases he used extreme abduction of the injured limb. By this means the broken surfaces were turned on to each other, muscular tension was released, and if an angle of 45° were obtained the neck of the femur was fixed against the acetabulum. He reduced displacement by pulley or manual extension, then abducted the limb with the knee flexed. The limb was fixed in a special abduction frame, or where an injury occurred out of reach of apparatus good fixation could be obtained by plaster-of-Paris. Fixation should be kept up for at least two months, usually three months. Massage and passive movements were important; the patient could be trained to move the limb in the abducted position. In cases in which deformity had occurred and the limb was adducted with eversion he forcibly abducted the limb under an anæsthetic and kept it fixed for ten days and then massaged.

Dr. NATHAN RAW read a note on Seven Cases of Acute Yellow Atrophy of the Liver, which demonstrated the relation of the disease to syphilis. Four males of the ages of 23, 15, 40, and 27, and three females, 17, 23, and 26 years of age, all had syphilis. In four of the cases leucin and tyrosin were demonstrated in the urine. In one of the females, a girl aged 17, there was a six months' pregnancy.

Mr. K. W. MONSARRAT read a paper on Carcinoma of the Rectum. He first discussed the question of the extent of operation. He described the result of examination of two specimens derived from abdomino-perineal amputations. In both specimens the extent of intramural infiltration was confined to the neighbourhood of the growth. He did not

consider that pathological anatomy imposed the duty of removing a large amount of bowel above the growth. He considered that an inguinal anus was preferable to a sacral or a perineal anus. He then drew attention to the high mortality of the combined operation in males, and considered that this method was not advisable in men unless the general condition of the patient was exceptionally good. On the other hand, the combined operation was the method of choice in women. He had performed the combined operation in one case of low pelvic colon cancer in two stages, but did not consider that this plan was advisable.—Mr. F. T. PAUL said it was 35 years since he had first removed a rectal cancer; and he had found that the growth did not extend far in the length of the bowel. The microscope showed practically no infiltration beyond the naked-eye margin of the growth. The colloid form was of bad prognosis and gave extension in the glands. In the ordinary cancer there was not usually glandular infection, except where the growth involved the margin of the anus. In his experience the formation of a sacral anus had been satisfactory if small and tight, while a perineal anus was unsatisfactory. In the former the gut had a rectangular turn which had a valve action, while the straight gut in the latter allowed incontinence and prolapse. The inguinal anus was good, but he thought the sacral the more satisfactory. He did not consider an abdominal incision necessary. He did not think high and fixed cases, especially if involving the bladder, worth the risk of removal of the growth, especially as cases might live for years after an inguinal colotomy alone.—Mr. R. W. MURRAY thought the radical operation unsatisfactory, and even went so far as to believe these cases were best left alone until a colotomy had to be done. He had seen a large number of cases in Vienna, some of which had been done 14 years ago; when he saw the condition of the artificial anus in the sacral region he had been unfavourably impressed. He thought an inguinal anus the least harmful.—Mr. DAMER HARRISSON and Dr. RAW also took part in the discussion.

## EDINBURGH OBSTETRICAL SOCIETY.

*Ruptured Primary Ovarian Pregnancy.—Insemination and Parturition.*

A MEETING of this society was held on Jan. 8th, Dr. J. HAIG FERGUSON, the President, being in the chair.

Mr. GEORGE L. CHIENE read notes of a case of Ruptured (very early) Primary Ovarian Pregnancy, and demonstrated his remarks with lantern illustrations. Having mentioned the causes of serious ovarian hæmorrhage, he then shortly referred to the literature on ovarian pregnancy. His own case was that of a married woman, aged 34, who was admitted to hospital supposed to be suffering from acute appendicitis, but the symptoms pointed rather to an internal hæmorrhage, and the question of a ruptured ectopic gestation was considered; the menstrual history, however, was perfectly normal. A laparotomy was performed, and, a large quantity of blood having been evacuated, a bulging mass, about the size of a cherry, was observed to be protruding from the uterine end of the right ovary. The ovary was rapidly removed. The patient made a good recovery, soon afterwards again becoming pregnant, and in due course gave birth to a healthy child. The ovary was cut in serial sections. Chorionic villi were present in the blood-clot, but no fœtus was found, nor were there any signs of a corpus luteum, lutein, or decidual cells. The pregnancy was probably either one of 10 or 22 days' duration.—Dr. A. H. F. BARBOUR mentioned a special point of interest—that it occurred at the uterine end of the ovary, otherwise it would have been less distinct if near to the fimbriated end of the tube or adherent to it. Another point was that there was such a very profuse hæmorrhage filling the abdomen with blood.—Dr. F. W. N. HAULTAIN considered the main point of interest was that no bleeding occurred from the uterus. Here there had been no regurgitation of blood down the tube and escaping from the uterus. It was not always the case that symptoms of stoppage of menses or irregular hæmorrhage occurred. He had met several with no symptoms of any kind.—Dr. G. F. B. SIMPSON, Dr. D. BERRY HART, Dr. JAMES RITCHIE, Dr. W. FORDYCE, Mr. E. W. SCOTT CARMICHAEL, Dr. JAMES YOUNG, and the PRESIDENT discussed the paper. All agreed that it was undoubtedly a case of ovarian pregnancy.—Mr. CHIENE replied.

Dr. BERRY HART read a paper on the Duration of the Interval between Insemination and Parturition in Certain Mammals as studied in Biometric Curves, with Special Reference to the Calculation of the Onset of Labour in Human Pregnancy. The statistics of Tessier on ewes, and on cattle by Earl Spencer and Tessier relative to the interval between insemination and parturition were first considered. The statistics in regard to 912 ewes gave a symmetrical narrow probability curve like that of cointossing, where 50 are thrown for a certain number of times. In the Tessier-Spencer cases, 1205 in all, the curve was similar but somewhat skew. The late Professor von Winckel gave the statistics in 245 cases where the infants weighed over 4000 grammes, and these also gave a probability curve, but one less narrow and with several freaks; it needed smoothing out. The greatest number of cases lay between the 284th and 288th days reckoned from the first day of the last menstruation. Dr. Berry Hart concluded: 1. These cases gave a probability curve symmetrical in ewes, somewhat skew in cattle, and irregular in the human female so far as yet observed. 2. The initial date of calculation in the human female should be the first day of the last menstruation, and the date of labour would be some time in the fortnight containing the 280th day as its centre. Thus, the date of labour could not be exactly stated, but was only a probability one. 3. Labour in von Winckel's cases was prolonged in some instances to the 334th day, and the whole range lay between the 240th and 334th days. 4. This prolongation of date was usually considered as a prolongation of the duration of pregnancy, but it might be due to fertilisation of the ovum shed at the next period, and this would account for the prolongation in a simple way. 5. Some explained the prolongation as a real extension of the pregnancy, and pointed out that in some of the cases the weight of the infants was much above the average. The evidence as to this was unsatisfactory. 6. There is certainly no exact number of days for the duration of human pregnancy and the probable curve is as yet unknown.—Dr. BARBOUR considered it was quite right to work by mean and not by averages. There was the possibility of having to deal with the impregnation of an ovum before the next menstruation, but there would then be a curve with a double head. Dr. Berry Hart's curves were valuable for the past, but it was questionable whether they were of practical value in making a calculation for the future in any case.—Dr. HAULTAIN considered it quite certain that there were cases of protracted gestation, and that in these cases the child was larger. He instanced a case where a woman in her first pregnancy went 2½ months past her expected time, and the child had to be broken up. The next time her labour, to which he was called, came on about six weeks after the calculated date, and a child was eventually born with much difficulty, weighing 13 lb. 12 oz. Labour was induced on the next occasion two weeks after full time, resulting in a living child weighing 10 lb.—The PRESIDENT alluded to the method of calculating the duration of pregnancies as ten cycles of 28 days each, and less or more according to the menstrual type.—Dr. FORDYCE and Dr. YOUNG spoke on the subject.—Dr. BERRY HART, in reply, said the lesson was that the calculation of the duration of pregnancy was a matter of probability, never an exact thing. The larger infants after what was considered protracted pregnancies might be due to an element of giantism from abnormal function of the pituitary body.

GLASGOW MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held in the Glasgow Royal Asylum, Gartnavel, on Jan. 17th, Dr. J. Crawford Renton being in the chair.—Dr. Ivy McKenzie showed and described pathological preparations from the following cases:—1. A woman, aged 40, an inmate of the Gartnavel Asylum, suffering from recurrent insanity with symptoms of exophthalmic goitre, leucoderma and bronzing of the skin, auriculo-ventricular tachycardia (230 per minute), and auricular fibrillation. Post-mortem examination showed disease of the thyroid gland and of the upper cervical sympathetic ganglion, and hypertrophy of the medullæ of

the suprarenals. 2. A man, aged 40, a dement, who died suddenly in Gartnavel Asylum with symptoms simulating intestinal obstruction, tympanites, fæcal vomiting, &c. Post-mortem examination showed necrosis of the pancreas and necrosis of the mucous membrane of the whole length of the small intestine, with marked congestion of the other coats of the small intestine.—Dr. David Newman read a short paper on Certain Urinary Conditions in Women associated with Frequent or Painful Micturition, and demonstrated with the projectoscope the cystoscopic appearances presented in the early stages of tuberculosis of the bladder and in the various stages of colon bacillus infection of the bladder. He pointed out that one of the slightest forms of colon infection of the bladder is seen frequently in infants and young children as the result of want of cleanliness in changing the child's napkins. The frequency of micturition may not be noticed in infancy, and for years afterwards the child suffers from noctural incontinence, which may persist until puberty or even later.—Dr. J. A. Wilson read a paper on Myopia, a Review of 500 Cases, with Special Reference to their Etiology. From an analysis of his cases he found (1) keratitis as the cause of myopia in 16 per cent.; (2) evidence of heredity in 54·8 per cent.; and (3) cases without opacities and without evidence of heredity in 29·2 per cent. In the hereditary group were 17 cases with opacities; 65 cases showed monocular myopia, largely accounted for by keratitis and by heredity. Lenticular changes were found in quite young people. The evidence regarding near work as a cause was reviewed, and it was pointed out that German school hygiene had not lessened the amount of myopia. It was essentially an enfeeblement, and developed both before and during school years, school work being an industry which was contemporaneous with the manifestations of heredity.

LEEDS AND WEST RIDING MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Jan. 31st, Dr. J. F. Dobson, the President, being in the chair.—Dr. G. W. Watson opened a discussion on Tuberculin, its place in modern medicine. Remarks were made on the varieties of tuberculin in common use, and the various methods of administration were outlined, with descriptions of the types of case suitable for each method. Dr. Watson was of opinion that the efficacy of tuberculin was so far proved that its use was essential in the proper treatment of most cases of tuberculosis of the lungs. He deplored the tendency under recent legislation to make the treatment of phthisis a specialty, and to give it into the hands of a few, rather than to obtain the skilled and enthusiastic coöperation of the whole of the profession.—Dr. A. Christy Wilson spoke of his experience of Beraneck's tuberculin, and instanced cases in which it had proved of great value.—Dr. A. G. Barrs spoke of the treatment as being still on its trial, and confessed that no convincing example of its usefulness had yet come within his experience.—Dr. Dobson spoke of the value of tuberculin in the treatment of cases of surgical tuberculosis. He was in favour of the method of administration recommended by Wright.—Dr. M. Coplans contributed some interesting information about tuberculosis in animals.—Cases were shown by Dr. J. B. Hellier, Mr. A. L. Whitehead, Mr. G. Constable Hayes, Dr. Dobson, Dr. C. Oldfield, Mr. J. A. Coupland, Mr. Michael A. Teale, and Dr. Watson.

HARVEIAN SOCIETY.—A clinical meeting of this society was held at St. Mary's Hospital on Jan. 30th. The following cases were shown:—Dr. Sidney P. Phillips: An abdominal case, probably tuberculous.—Dr. W. H. Willcox: Two anomalous cases of Exophthalmic Goitre, a case of Chronic Enlargement of Joints resembling Charcot's joints, and a case of Perforating Ulcer of the Foot.—Dr. Reginald H. Miller: Post-pneumonic Fibrosis of the Lung, and a case of Endemic Cretinism 15 years old.—Dr. E. G. Graham Little: A man with Psoriasis covering his whole body, and a woman with Lichen Planus Hypertrophicus.—Mr. V. Z. Cope: A case of Syringomyelia, and a case of Recovery after Rupture of the Jejunum.—Dr. William Hill: A case of Epithelioma of the Larynx, and a case of Stricture of the Pharynx after swallowing glacial acetic acid with suicidal intent.—Mr. C. W. G. Bryan: A girl with a Sarcoma of the Lower Jaw, and a man with a Large Tumour just above the Ankle of doubtful nature.—Mr. D. C. L. Fitzwilliams: A Fibro-lipoma in a child, and a man with a Large Epithelioma growing rapidly from an old urinary fistula.

# Reviews and Notices of Books.

*The Evolution of the Vertebrates and their Kin.* By W. PATTEN, Ph.D. London: J. and A. Churchill. 1912. Pp. 486. Price 21*s.* net.

THE views of Dr. Patten, which he has laid before the scientific world in many memoirs of late years, and which are now crystallised in the present volume, have something in common with those of the well-known English physiologist, Dr. W. H. Gaskell, of Cambridge. But there is this essential difference which appears to us to pull down the balance in favour of Dr. Patten, that while Dr. Gaskell demands the loss of the primitive alimentary tube as a part of the digestive system and its conversion into the neural canal of the vertebrate, Dr. Patten requires no such drastic evolutionary change. Dr. Patten, indeed, can arrive at an accurate comparison of the arachnid and vertebrate systems and organs without any such hiatus, and merely demands the exchange of the dorsal for the ventral surface in progression. Thus the old idea of the elder Milne-Edwards and of Geoffroi St. Hilaire is resuscitated in a somewhat unexpected fashion.

We can readily allow so much to Dr. Patten, for many invertebrates, notably certain archaic crustaceans, which are particularly implicated in Dr. Patten's scheme, do habitually swim upon their backs with the nervous system dorsally directed. But when we come to his detailed comparisons and to the general aspect of his scheme of development the same difficulties meet us that have been urged by many morphologists in regard to Dr. Gaskell's ingeniously argued views. It is certain that at the moment there is an almost unanimous consensus of opinion that the derivation of the vertebrate stock in the way suggested in the volume before us is impossible and contrary to all received principles. Nevertheless, those same morphologists are at hopeless variance when it comes to anything alternative. So far Dr. Patten is just in his criticisms, and there is always a trace in his arguments, and for the matter of that in the arguments of his opponents, of the essentially non-scientific kind of controversial method—the method of simple assertion.

It is held, for example, on the one side, that the path of evolution has led from the basal forms and not from the more specialised members of one group of animals to another. Therefore we should derive the vertebrates, say the supporters of this opinion, not from the higher groups of the segmented animals, such as arachnids, but from the lower—that is, from simple, worm-like creatures. Dr. Patten, and with him Dr. Gaskell, takes the reverse view. It must be admitted that the best arguments in the way of close anatomical reasoning have been adduced from this point of view, and Dr. Patten is to be congratulated upon the convinced and convincing way in which he has marshalled and used the actual facts at his disposal. To those of us who have lived long enough to see many "phylogenies" put forward with enthusiasm and die in obscurity and neglect Dr. Patten's attempt will not appear as final. And, indeed, the great difficulty in his way, which is in the way of all such attempts, is the necessary lack of information of crucial anatomical data. No fossil will ever yield certain points which it is essential that we should know. Particularly is this the case with those admittedly mysterious creatures, the ostracoderms, which are the pivot upon which Dr. Patten's reasoning turns. They are palæozoic animals, usually regarded as fishes or quite near to them. To Dr. Patten, however, they are arachnid in nature and at the base of the vertebrate series; but we cannot argue from their bony exterior to their viscera.

Apart altogether from his controversial theories, Dr. Patten's volume has its uses. We find there excellent figures and descriptions of many zoological facts, especially in regard to these ostracoderms. As a text-book of the structure of these animals and of the marine arachnids, i.e., limulus and its allies, Dr. Patten's treatise is to be commended and may be accepted; as an exposition of an evolutionary view it cannot be ignored, but it must be studied with a more critical attitude.

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*Guide to Midwifery.* By DAVID BERRY HART, M.D. Edin., F.R.C.P. Edin., Lecturer on Midwifery and Diseases of Women, School of the Royal Colleges, Edinburgh. London: Rebman, Limited. 1912. Demy 8vo. Pp. 790. Four illustrations in colour and 268 diagrams. Price 25*s.* net.

Dr. Berry Hart has written in this guide to midwifery a book of much originality in contents and arrangement. Part I. gives a succinct account of midwifery from a modern standpoint. To each chapter there have been added, when necessary, instructions as to what practical work should be done and what specimens examined in order that the student may know the thing itself as far as possible, and not its imperfect concept verbally expressed. In Part II. notes have been added to certain chapters elucidating difficult points and giving summaries of new operations and of views and theories which would distract the reader in a first study of the subject. The result is a book of great interest and one which does credit to its author.

In the chapter on the development of the ovary Dr. Hart puts forward his views that the oocytes originate from an early division of the zygote, and that the primitive germ cells derived from this travel to the Wolffian ridge, where they pass into the germ epithelium. Thus one primitive germ cell of the fertilised ovum or zygote has formed the individual, while the others have passed into its genital ridge on the Wolffian body. Dr. Hart, as he explains in the chapter on evolution in Part II., holds that there are two kinds of ova, which he terms the Wolffian and non-Wolffian oocytes. He believes that there are also, in all probability, two kinds of spermatozoa, the Wolffian and non-Wolffian spermatozoon. Two different kinds of spermatozoa have actually been described in man, but this observation is disputed. He regards it as highly probable that when fertilisation takes place it is a Wolffian ovum which joins with a non-Wolffian spermatozoon, and a Wolffian spermatozoon with a non-Wolffian ovum. In this way the sex is determined at the time of fertilisation. The author's well-known views on the origin of the uro-genital organs are set out in the consideration of the development of the posterior end of the embryo.

Just as these early chapters contain much that is of absorbing interest, so the reader will find all through the book evidence of the author's originality of mind and profound knowledge of the literature of the subject. In Part II. the section dealing with evolution in its relation to obstetrics, that on the mechanism of labour, and the discussion of the mechanism of the third stage of labour—in which the author's own views are set forth very fully—all make interesting reading, as do the sections on the internal secreting glands in their relation to obstetrics, and the various theories of the nature of eclampsia.

Dr. Hart says in the preface that in his view it would be better if a treatise on midwifery were not illustrated at all, and if the student studied the text and examined physiological and pathological specimens, bones, and microscopic specimens, instead of merely reading the book and looking at the illustrations. Recognising the fact, however, that this is not practicable, a number of illustrations are given; many of these are original, and the rest are taken from the best-known atlases and monographs. The coloured plates are exceedingly good, and form a notable feature.

We strongly recommend this book, not only to students, but also to their teachers.

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*Occasional Papers on the Prevention of Some Common Diseases in Childhood.* By J. SIM WALLACE, D.Sc., M.D. Glasg. London: Baillière, Tindall, and Cox. 1912. Pp. 103. Price 3*s.* 6*d.*

UNDER the above title Dr. Sim Wallace publishes a series of papers which from time to time have appeared in various medical and dental journals. The more important of these are essays on (1) Diet in Infancy and Childhood, (2) the Diet of School Children, and (3) the Prevention of Dental Caries. It would be unfair to say that Dr. Wallace has but one idea, but it cannot be denied that he lays more to the charge of "pappy food" than this undesirable form of food deserves. It is a physiological law that atrophy or want of development follows want of use of any organ; and there can be no doubt that imperfectly developed and imperfectly mineralised teeth do result from the eating of soft foods, but there are other causes of dental caries and other causes of dyspepsias than defective teeth. Dr. Wallace's view that adenoids are almost confined to those children who sleep with open windows is, perhaps, too eccentric to discuss seriously. If we apply the physiological law that hypertrophy follows overaction, we arrive at the very sound position that the hyperplasia of the lymphoid tissue which constitutes the familiar adenoid vegetations must be dependent on over-work or over-stimulation. The chief function of the lymphatic system in childhood is bacteriolytic, so that on Dr. Wallace's own method of argument we arrive at one of the causes of adenoids which can have no possible connexion with night air, and, indeed, one which is greatly aggravated by bad air. It is far more likely that bronchitis and adenoid vegetations are caused, or at least promoted, by bad air, than that they are due to night air, as is maintained by Dr. Wallace. The development of the jaws and teeth by the mastication of hard varieties of food eaten is a result which needs no proof, though it is a truth that requires to be constantly brought home to those who have the charge of children; but that all the ills to which children are subject can be prevented by the author's dietary is a view which is not likely to gain general acceptance.

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*A Text-book of Practical Therapeutics.* By HOBART AMORY HARE, M.D., B.Sc., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia. Fourteenth edition. London: Henry Kimpton. 1912. Pp. 984. Price 21*s.*

IN order to prepare for the present edition the book has been enlarged, thoroughly revised, and to a large extent rewritten. When this work first appeared the treatment of disease was more empirical than it is to-day. Dr. Hare's endeavour has been to link together the rather dry facts of materia medica with the results of laboratory investigation, so as not only to demonstrate the application of remedial measures to disease, but also to attempt to explain their employment upon a rational basis. He has recognised the fact that the physician at the bedside needs and desires all the help he can get, whether it comes from laboratory experiment or from bedside experience, and furthermore wants this help in a form in which he can use it when face to face with problems which are of vital importance to him and to his patients. Accordingly, the work has been planned so that every aspect of therapeutics is considered, and also as

that reference to any particular remedy or to the treatment for any disease is easy.

The work is divided into four parts. The first is headed "General Therapeutical Considerations," and numerous hints are given as to the mode of action of drugs, the modes of administering drugs, and prescription writing. Part II. contains a description of drugs themselves, including their physiological action, the conditions in which they may be employed, and the methods of their administration. This portion of the work has been brought thoroughly up to modern requirements; the uses of salvarsan, tuberculin, and vaccine therapy are duly described, as well as the recent ideas in regard to the employment of cardiac tonics, especially digitalis. An interesting account is given of the toxic action of digitalis which by its influence on the vagi interferes with the passage of the contraction wave over the bundle of His. Further, the digitalis stimulates the ventricle to increased activity, and this aids in the production of extra systoles. The development of this phenomenon or of dropped beats during the administration of the drug is regarded as an indication for stopping it. In Part III. remedial measures other than drugs are considered, and amongst them Bier's hyperæmic treatment is fully described. The fourth part of the work is devoted to the treatment of disease, the various maladies being placed in alphabetical order.

Taken as a whole, the book is a thoroughly good one, but it will be found more useful as a work of reference than for the use of students.

## LIBRARY TABLE.

*Précis Pratique d'Électricité Médicale.* By G. GEIGER, Doctor of Medicine of the Faculté de Paris. Paris: Jules Rousset. 1913. Pp. 409. Price 6 francs.—This is a useful handbook of medical electricity. Speaking generally, its chief function is to explain those technical questions that are usually very troublesome to those who have not devoted special attention to the subject. The first part of this manual is confined to the study of those more or less elementary physical matters that it is essential to know thoroughly before it is possible to understand the procedure in medical applications. In this section are included points relating to the X rays, light, and heat, so far as they apply to medical work. In the second part the various forms of apparatus are described along with the principles upon which they work and the proper methods of using them. In the third part practical applications and the best method of dealing with any particular condition will be found. A system of selection has been employed, so that for any particular disease we are given only the method or methods that are known to be really useful. We are thus spared much that is of little or no benefit, and this is an example that might with advantage be followed much more generally than it is. The manual is fully illustrated by many diagrams and other figures, and the author has succeeded very well in carrying out the main purpose of this work.

*Extraction of Teeth.* By J. H. GIBBS. With 53 illustrations. Edinburgh: E. and S. Livingstone. 1912. Pp. 163. Price 7*s.* 6*d.* net.—We are informed by the author in the preface that "no progress has ever been made by orthodoxy, and it is his deep conviction that the orthodox methods of extracting teeth are wrong in principle and bad in practice that has induced him to consent to give a wider publicity to his own heterodox views." What are these heterodox views? One is that only two pairs of forceps are necessary for the extraction of teeth, one pair for the removal of the maxillary teeth and another for the mandibular. Now, one factor that is necessary for carrying out tooth extraction in a really scientific way is that the blades of the forceps should accurately fit the roots of the tooth to be removed. If a series of molar teeth be taken, and the instruments suggested by the author and those usually advocated be applied to the teeth, there can be no question that with the latter a far more accurate hold can be obtained. The practical experience, too, of the large majority of skilled operators and teachers is in direct variance with the author's views, and we can only say that the method advocated is likely to lead to clumsy rather than to neat operations. The position advocated for the "prop" is in the front of the mouth, and the author's illustrations show the interference this must cause to the use of the fingers for gripping the alveolar process. A "prop" at the back of the mouth gives a clear and unimpeded view of the field of operation. There are other points in the book to which exception may be taken, notably the method advocated for grasping upper forceps. With his views on the employment of anæsthetics in dental practice we are in complete agreement, and there are several valuable hints of use to the practitioner. The book would be more readable if the author had not been so discursive in the treatment of several sections of his subject.

*London County Council, London Statistics, 1911–12.* Compiled under standing orders and regulations of the London County Council. London: P. S. King and Son. 1913. Pp. 651. Price 5*s.*, post free 5*s.* 6*d.*—This volume, which we have received from the Clerk of the London County Council, contains most valuable and interesting information illustrated by maps and diagrams showing in diagrammatic form the statistics of the administrative county of London and of the public services carried on therein, together with certain statistics of the adjacent districts. To anyone interested in the life and welfare of London this book is invaluable.

## JOURNALS AND MAGAZINES.

*The Journal of Hygiene.* Edited by G. H. F. NUTTALL, J. S. HALDANE, A. NEWSHOLME, C. J. MARTIN, J. C. G. LEDINGHAM, and G. S. GRAHAM-SMITH. Vol. XII., No. 4. December, 1912. Cambridge University Press. Price 7*s.* 6*d.*—J. A. Arkwright describes investigations on an epizootic disease which occurred amongst salmon and trout in the south-west of England during the summer of 1911. It presented the same symptoms as the disease which occurs in Germany, Austria, and France, known as furunculosis of salmon. Abscess-like cavities, softened hæmorrhagic foci, and small hæmorrhages in the muscles were of frequent occurrence, but were also frequently absent. Congestion of the lower intestine occurred constantly. A pigment-forming bacillus occurred constantly in large numbers in the blood and internal organs and in the muscular hæmorrhages, but was absent from the very large proportion of healthy control fish. This bacillus is probably identical with B. salmonicida and B. truttæ, and is almost certainly the cause of the epidemic disease. It was present in some apparently healthy fish bred in captivity. These may have been examined during the incubation stage, or may have been healthy carriers. The bacillus was destroyed in a few hours by sea-water, and even by a mixture of equal parts of sea-water and tap-water, though it lived for at least five days in tap-water. It is therefore improbable that the salmon usually became infected in the sea. Cultures of the bacillus soon die out at 36° C. Hot weather favours the development of the disease. As the author states, a number of points still require investigation: whether salmon coming up from the sea are infected before they enter rivers; whether the spread of the disease from river to river is only due to the introduction of fish from other rivers and breeding stations; whether other fish besides the salmonidæ

are naturally infected; whether infection is more easily obtained by feeding or by pollution of the water with the bacillus, and, if the latter, whether wounds are necessary; the effect of the temperature of the water on the production and prevalence of the disease.—H. Chick, in a paper illustrated by several diagrams and tables, comes to the conclusion that the action *in vitro* of normal rabbit serum upon B. coli commune consists usually of three or more phases, the duration of which is inversely related to the temperature. The latent period which occurs on first mixing bacteria and serum is followed by a period of bacterial growth, which is followed by a period of bactericidal action. This may be final or may be succeeded by a second period of growth. The germicidal action takes place in accordance with a logarithmic law, so that death-rate remains proportional to the concentration of surviving bacteria. The bactericidal action of serum thus falls into line with all other cases of disinfection hitherto investigated.—E. A. Cooper gives an account of some observations on the protective and curative properties of certain foodstuffs against polyneuritis induced in birds by a diet of polished rice. His paper is divided into two parts. Part I. deals with the quantitative determination of the preventive powers of various common foodstuffs against polyneuritis, and Part II. with the fractionation of some of these foodstuffs with a view to the isolation of the active constituent or constituents. Lean meat and fish were found to be of little value, but heart muscle and brain were greatly superior. Egg-yolk considerably exceeds other foodstuffs in its capacity for preventing the disease. Dried brewers' yeast is possessed of considerable preventive power, nearly as great as that of egg-yolk. The antineuritic constituent of meat is not extracted by water, and only to a small extent by ether. It is readily extracted by alcohol, and after this procedure is easily dissolved in water. From egg-yolk it can be easily extracted by both alcohol and ether. It is, therefore, not combined with fat or free lipoids, but is possibly present in the combined lipoids. Strychnine does not cure polyneuritis, but prolongs the lives of pigeons affected with the disease.—W. W. Clemesha criticises Dr. Houston's statement that "the original proportion between the various kinds of bacillus coli may be greatly altered," and that "the method aims at encouraging the typical bacillus coli to multiply and oust the non-typical in the struggle for existence in a liquid nutrient medium." The writer has carried out a number of experiments with polluted water, fresh fæces, and mixed and pure laboratory cultures, and shows that there is practically no selective or "enrichment" action in favour of any species of coliform bacilli. He regards 18–20 hours as the best time for incubation in a fluid medium, and states that if this period be adhered to the results obtained give a reasonably accurate picture of the species of intestinal organisms present and their numerical relation to one another. He further discusses the possibility of assigning a definite place to certain varieties of fæcal organisms as a measure of their relative significance as indicators of dangerous pollution by a careful study of their life-history.—E. H. Hunt contributes an interesting article on the regulation of the body temperature in extremes of dry heat founded on experience in the Deccan, India. He states that during extremes of dry heat no great discomfort is felt by healthy persons, and fairly hard physical work is possible in the sun, even with a "shade" temperature of 110° F. or more. The amount of water absolutely required, and actually consumed, is very large; and this is accounted for by the necessity for neutralising, in some circumstances, the whole heat metabolism (requiring up to 6000 c.c.), and in addition a variable but sometimes very large amount of heat added to the body by radiation and conduction. A healthy man carries in his body a large reserve of water, this reserve being mainly stored in muscle, and being so readily available that the percentage of water in the blood is not appreciably diminished, even when several litres of water have been lost by sweating. If, however, it be extensively drawn on, replacement seems to occupy many hours, and this delay is an important factor, forming a strong argument against any undue or needless use of stored water owing to a restriction of drinking.—G. Massee describes observations on discoloured spots sometimes present on chilled meats. Only one kind of fungus, Cladosporium herbarum, producing "black spots," is constantly present. The spots occur in the subcutaneous areolar tissue, first appearing as minute scattered points, which gradually increase in size up to 1—rarely 2—cm. in diameter and retain a more or less circular outline. The circumference is seen to be fringed with dark-coloured radiating hyphæ when examined under a low-power lens. When small, the spots are grey; when large, dull black with a tinge of olive-green. As a rule the spots are separated from each other by a distance of from 2 to 6 in., but in bad cases are present in groups. The fungus does not penetrate more than 4 mm. into the substratum. The black patches invariably remain dry—that is, there is never any indication of liquefaction or of putrescence set up by the fungus. It does not grow on bones or cartilage. It grows best at low temperatures. The characters and cultures of the fungus are fully described. It is evident that the meat is infected before it is packed. Certain other fungi occasionally forming spots on chilled meat are also mentioned, and the appearances of the infected meat and also of the fungus are shown in two coloured plates.—P. W. Bassett-Smith contributes an article on certain points in the diagnosis and treatment of Mediterranean fever. In describing the agglutination method for diagnosis he shows that certain precautions ought to be observed: (1) the culture should be proved to be active with known specific blood, and should not agglutinate with other sera; (2) both heated and unheated serum should be tested; (3) the test should be carried to high dilutions, 1/400th or more. In regard to treatment he draws attention to the extended employment of vaccines and yeasts or yeast products. Vaccines should be freshly prepared, and doses of 100 to 500 millions given at five to seven day intervals in the loin. With moderate hectic temperature this method may give excellent results, but is contraindicated when pyrexia is continuous or remittent. For neuritis he has employed yeast in 2 drm. doses, twice daily, apparently with beneficial results.—A. MacConkey describes his method of toxin production from the diphtheria bacillus, and in his first chart gives in the form of a curve the results obtained week by week from September, 1910, to July, 1912. From the point of view of weekly variations the curve only depicts what has been a universal experience, and one for which no explanation is forthcoming. It also shows that there are a rise and fall in the size of the minimum lethal dose during the summer and winter respectively, and the rise and fall are not gradual. At the end of the summer there is a marked increase in the production of toxin, and then the strength of the toxin remains high until about the end of March, when a drop occurs and the toxin production remains low until the autumn. Other charts illustrate the interesting fact that there is a similarity between the curve of toxin production and curves showing the incidence of diphtheria in the human subject. In another paper MacConkey gives the results of observations on the effect of heat (36° C.) on diphtheria toxin. He shows that when serum is kept in small bottles deterioration appears to take place on an average about six times as fast at 36° C. as in the ice-chest.—H. Tebbutt describes experiments made in order to ascertain whether pathogenic organisms fed to

larvæ can be recovered from the adult fly (M. domestica). He states that B. dysenteriæ (type Y) cannot be recovered, unless flies have been bred from disinfected ova. B. typhosus was not recovered in a single case. Such organisms as "Bac. A." (Ledingham) could be recovered. He concludes that the possibility of flies becoming infected from the presence of pathogenic organisms in the breeding ground of the larvæ may be considered as very remote.—W. J. Penfold and D. Norris describe experiments on the generation time of bacteria. They conclude that the generation time of B. typhosus in 1 per cent. peptone at 37° C. is 40 minutes. Its rate of growth is greatly influenced by the concentration of peptone. Below 0·2 per cent. the generation time is inversely proportional to the concentration of peptone used. The addition of 0·175 per cent. of glucose to a medium containing only 0·1 per cent. of peptone lowers the generation time by about 50 per cent.

*British Journal of Inebriety.*—In the January number Dr. Herbert Rhodes writes on the Relation of Alcoholism to Tuberculosis. He prefaces his remarks by the statement that he includes under the term alcoholism all degrees of non-teetotalism, but his references throughout the article appear to be exclusively to cases of pronounced intemperance. The most interesting point brought out in the paper is the difference in this particular relation of alcoholism according to the social and economic conditions of the drinker, drinkers of the outdoor labouring class remaining relatively immune while their dependents suffer from the underfeeding and overcrowding and from the resultant tuberculosis. Dr. Rhodes has taken the views of a number of sanatorium physicians regarding the use of alcohol in phthisis, and candidly admits that he finds a general agreement that small doses are beneficial as a sedative or an appetiser at meals, though he is constrained to add that personally he regards such doses as "damnable in their moral and eventually in their physical effects."—A paper on Alcohol and Modern Life, by Mr. J. Lionel Tayler, being a portion of a popular lecture, gives a clear and, allowing for some slight teetotal exaggeration, a reasonable account of the physiological effects of alcohol and of the social causes and pathological results of excess.—In a brief article entitled, "When is a Man Drunk?" Mr. Norman Porritt has collected a number of remarkable legal, medical, and popular utterances showing the extraordinary confusion of opinion with regard to this question which has been very much before the public of late.—An illustrated article on the Church of England Temperance Society's Homes for Inebriates by the secretary of the society, the Rev. G. A. Thompson, completes the number.

## ROYAL COLLEGE OF PHYSICIANS OF LONDON.

### MEETING OF COMITIA.

A COMITIA was held on Jan. 30th, Sir THOMAS BARLOW, Bart., K.C.V.O., the President, being in the chair.

The following gentlemen having passed the required examination were admitted Members of the College: Anthony Feiling, M.B. Camb., L.R.C.P., Nathan Mutch, M.B. Camb., L.R.C.P., Robert Hunter Steen, M.D. Lond., and Francis Martin Rouse Walshe, M.D. Lond.

Licences to practise physic were granted to 98 gentlemen who had passed the necessary examinations.

Diplomas in Public Health were granted jointly with the Royal College of Surgeons of England to the following: Frederick John Ayre, Harold Balme, Jamasp Cursetji Bharucha (Lieutenant, I.M.S.), Elsie Mary Chubb (under the Medical Act, 1876), William Edmund Cooke, Archibald Ferguson, Clifford Allchin Gill (Captain, I.M.S.), Harvey Hilliard, John Edward Hodgson (Major, R.A.M.C.), Herbert Michael Henry Melhuish (Captain, I.M.S.), Alexander Loftus Otway (Captain, R.A.M.C.), and Percy Rose.

The following communications were received: 1. From the Secretary of the Royal College of Surgeons of England, dated Dec. 12th, 1912, and Jan. 10th, 1913, reporting proceedings of the Council of that College on Dec. 12th and Jan. 9th respectively. 2. From the Clerk to the Privy Council, dated Dec. 19th, 1912, enclosing a programme of the Fourth International Congress on Physio-therapeutics to be held at Berlin from March 26th to 30th next, and stating that should the College nominate a representative the Lord President of the Council would ask the Foreign Office to give him credentials as delegate of His Majesty's Government. Dr. A. E. Garrod was nominated as representative of the College. 3. From the Colonial Office, dated Jan. 3rd, 1913, with enclosures, concerning the appointment of some distinguished medical man to represent His Majesty's Government at the Tenth Session of the Australasian Medical Congress to be held at Auckland, Feb. 9th to 14th, 1914. The matter was left in the hands of the officers of the College. 4. From the Home Office, dated Dec. 20th, 1912, asking the opinion of the College on an application from the Liverpool Infirmary for Children for permission to use the prefix "Royal." A favourable reply was returned.

Sir E. Cooper Perry, Dr. F. W. Andrewes, Dr. E. H. Starling, and Sir J. Rose Bradford were elected councillors. Sir Francis H. Champneys was appointed a representative of the College on the Central Midwives Board for one year from April 1st next.

A discussion on the Insurance Act ensued.

Dr. J. F. POYNTON brought before the College certain difficulties in the position of Fellows of the College who are hospital physicians due to the altered conditions that have arisen with the establishment of the medical panels. He said that these difficulties related to the hospitals and their honorary physicians, to the doctors on the panels, and to the patients themselves. The main difficulty was the matter of determining which patients were suitable for hospital relief and which for treatment by the doctor on the panel; there was some danger of patients being sent to and fro between the hospital and the doctor. It would often be onerous for the physician to out-patients to decide the question, and he was afraid the result would be that the hospital would be blamed for whatever happened. He hoped that the College would keep a sympathetic eye on the difficulties he had mentioned. He thought that the leading article in THE LANCET of Jan. 18th had explained the subject very clearly.

The PRESIDENT observed that the difficulties should be settled locally at the various hospitals. Two committees had already been appointed to consider the circumstances of the Insurance Act.

Sir DYCE DUCKWORTH (the treasurer) placed reliance on the lay management of the hospitals, and referred to the plan adopted at St. Bartholomew's Hospital.

Some further discussion took place, but no resolution was proposed.

Dr. H. SAINSBURY brought forward the following proposition:—

> With reference to the medical working of the Insurance Act now in force, to draw attention to the resolutions passed at a meeting of the Joint Committee on Nov. 13th, 1912, and to urge upon the College the necessity for a further consideration of the present situation with a view to further action. [These resolutions were published in THE LANCET on Dec. 21st, 1912, p. 1742.]

Dr. Sainsbury urged (1) that the majority of doctors were working the Act under compulsion and labouring under a strong sense of injury; (2) that the conditions were temporary and could be adjusted; and (3) that in three months' time some further decision would have to be reached. He hoped that the resolution passed by the College would not remain as mere pious opinions, but that they would be acted upon. The general practitioners were the backbone of the profession, and they had never stood in greater need of guidance than at present. On grounds of freedom of action and development of character, and on the grounds of the interest of the insured, he urged that the College should give the matter its continued attention. He moved the following resolution:—

> That this College do summon a meeting of the Conjoint Committee at the earliest possible day to further consider the resolution passed on Nov. 13th, 1912, and to report to the College.

This was seconded by Dr. F. J. SMITH, who referred to the methods which had been adopted to force medical men to go on the panel, and trusted that the College would be roused to a sense of its responsibilties to the Licentiates.

The resolution was carried.

A report from the Committee of Management, dated Dec. 3rd, 1912, was received and adopted. The report was as follows:—

1. The committee recommend that the following institutions, which have been visited by members of the committee and reported on as fulfilling the requirements of the Board, be added to the list of institutions recognised by the examining Board in England for instruction in chemistry and physics, viz.: Radley College; King Edward VII. School, Lytham.

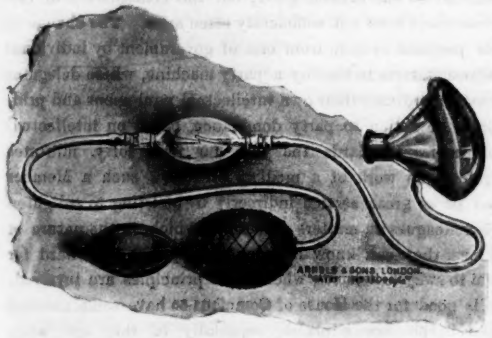
2. The committee recommend that the course of laboratory instruction in Public Health at the University of Cambridge be added to the laboratory courses recognised by the Royal Colleges for their Diploma in Public Health.

After some further formal business the PRESIDENT dissolved the Comitia.

# New Inventions.

## A NEW CHLOROFORM APPARATUS.

I HAVE been using a modification of Junker's method of giving chloroform with the most satisfactory results. As there are no valves to obstruct respiration, no taps to fumble with (often in the middle of the night), no lint or flannel to become damp and impervious, as the strength of the vapour can be regulated and easily measured, and as there is, in addition, a free access of air, almost every possibility of danger is done away with. This apparatus consists of a glass bulb about the size of a duck's egg. There is a tube at either end to connect it with a face-piece on the one hand and a rubber bellows on the other. The exit tube is prolonged into the middle of the bulb and ends in a pinhole aperture. The inlet tube is very similar, so much so that the bulb is in every respect reversible. Two or three drachms of chloroform can be put in at either end and the connexions can be made at either side without the least fear of the liquid escaping to burn the patient's face or to go down the patient's throat, which has caused many accidents with the ordinary Junker. It can be easily demonstrated that each pint of air blown through this bulb carries with it 2 minims of chloroform, no matter what position the bulb is in. In fact, it is like a chronometer which has to keep good time no matter how the ship rolls. There is no necessity whatever to catch the inspirations.



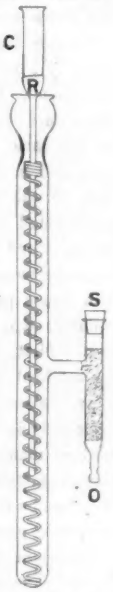
The size of the pinhole in the middle of the bulb is so fixed that a constant flow of vapour can be kept up with a definite strength by a free use of the bellows, and one can leave off blowing for from 10 to 15 seconds without the current ceasing. This does away with all taps and regulators, and reduces the use of this apparatus to the utmost simplicity. I most urgently recommend a solid face-piece, which will last a life-time. It should have an aperture without valves or obstructions that will allow free respiration and the advent of additional air. For midwifery this method is simple and constant by comparison with the so-called open method, where the vapour is erratic and the materials used may soon become damp and impervious by the expired moisture. It is the primitive methods that have been used in the administration of chloroform that have brought most undeservedly the best of all anæsthetics into disrepute Medical men who propose to use this method should ascertain how much chloroform is abstracted from it by the passage of a measured quantity of air. The illustration will explain the simplicity of this method. A piece of dry Turkey sponge, 1 × 1 × ½ in. in the bulb, absorbs the condensed moisture. With it the vapour is continuously constant at 2 minims of chloroform in each pint of air driven through.

The apparatus is made by Messrs. Arnold and Son, of Giltspur-street, London, E.C.

Harlesden, N.W. ALFRED G. JONES, L.M.S.S.A.

## SIMPLE APPARATUS FOR INSERTING RADIUM INTO LENGTHS OF STERILE RUBBER TUBING.

IT is clearly desirable that in hospitals and other institutions using radio-active substances the operator should be protected as far as possible from the deleterious effects of the radiations. This especially applies where it is required to insert a tube of radium, enclosed in its cylindrical metallic filter, into a long length of rubber tubing, preparatory to treating an internal growth. Lengths of tubing, closed at one end and only ·5 mm. thickness in the wall, are specially made for such a purpose, and the usual practice consists in gradually working the radium along the tube with the fingers, probably assisted by a trace of lycopodium powder or French chalk. This is a very tedious process, involving a dangerous exposure to the radiations, and in addition necessitating final sterilisation by fluids or vapours. The following method has therefore been devised in the Physics Laboratory for use in the radio-therapeutic department of the Cancer Hospital with a view to overcoming these objections. The requisite apparatus consists of a glass tube T (see figure) which may be of any convenient length and about five-eighths of an inch in diameter. Its upper end is enlarged to form a cup as shown, and so graduated in width at the neck that the rubber tube R, when slipped over the tapered end of the short glass tube C, shall form an air-tight joint when C is lowered into T (it is shown raised in the diagram). Within the long tube T there stands a nickel wire spiral, the diameter of each turn of which slightly exceeds that of the cylindrical radium filter. The tapered end of C must also be large enough at the opening to allow the filter to pass freely through it. A side tube is also provided. It is plugged at the top by a rubber stopper S, the inside being packed with cotton wool and the lower part drawn out to take a rubber connexion. To prepare the apparatus, the short tube C is removed together with the rubber tubing attached to it, so that the latter may be coiled into a Petri dish and sterilised at 120° C. The tube T must then be plugged with cotton wool, the stopper S removed, and the whole sterilised by hot air at 160° C. When required for use, T is held vertically in a clip stand, the cotton wool plug is removed, and a flame passed once or twice over the mouth of the cup. The rubber tubing is then lifted from the Petri dish and guided by means of sterilised forceps into the upper end of the spiral. When the rubber tubing has been run in, the stopper S is replaced and O connected to a vacuum pump. A slight exhaustion suffices to expand the rubber tubing till it fills the spiral, so that if the radium in its filter be picked up with forceps and dropped into the tube C it falls at once to the bottom. On allowing air to re-enter T through the cotton wool in the side tube the rubber contracts to its original dimensions and closely fits over the radium filter.




The loaded tubing may now be easily lifted out and the radium applied directly as required. The method is in reality simple and rapid. It has the advantage that the fingers are never in close proximity to the radium, it enables narrower rubber tubing to be used than heretofore, and since the sterilisation is done by dry heat, the use of irritating substances is entirely avoided. The radium may of course be quickly removed from the rubber tubing by replacing it in the tube T, which is then again exhausted as before and inverted.

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# THE LANCET.

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## The Medical Man in Politics.

THE death of Lord ILKESTON naturally directs attention to the relation of the medical man to politics. It is, perhaps, noteworthy that in the Anglo-Saxon countries the number of medical men who take an active part in their respective legislatures is very small as compared with the numbers so engaged in the Latin countries; especially in South and Central America does medicine take its share in the counsels of the country, but also in Europe there is a noticeably larger proportion of medical men in the legislatures of France and Italy than is ever found in our own Parliament. In the French Parliament of 1906, for instance, there were over 90 medical men. In our House of Commons at the same period there were barely a dozen medical men, and in the United States there were only four medical men in the Federal legislature, though doubtless others participated in the legislatures of the various States. In Germany and Austria the proportion is always much higher, a greater recognition being extended to scientific efficiency. The reason probably is two-fold, at any rate in our own country, why medical Members of Parliament are so few. First, there is a disinclination on the part of the medical man himself, arising from the survival of a professional tradition inherited from times whose spirit essentially differed from our own, that it is prejudicial to a medical man's professional status to engage in any serious pursuit outside his professional work; second, there is an objection on the part of the public to medical men playing a prominent part in public affairs, founded on a dread of the development of a "priesthood of medicine." This dread is naturally more likely to flourish in the Anglo-Saxon civilisation, which has been for so long the cradle of political freedom and the champion of the democratic idea, though it is hardly a proof of the wisdom of democracy. As regards the first difficulty, its operation can be traced in Lord ILKESTON'S career. He first devoted his attention to municipal politics in Birmingham, where he was in practice as a consultant, and he contrived to carry on both duties efficiently. When he became a Member of Parliament, however, he necessarily began to loosen his hold on medical practice, but he still continued to discharge with unremitting attention his duties to his profession as a Direct Representative on the General Medical Council, while also doing good work as a hospital physician. Promotion to a Government post compelled him still further to let go of his professional work, though he still attended to his duties on the General Medical Council; but finally he devoted himself with practical absorption to politics, where his voice was always heard in Parliamentary debates on the side of medical reform.

The medical man, especially in these days of feverish and overcrowded legislation, can seldom continue to occupy himself to advantage with both legislative affairs and medical practice, and it is a most regrettable fact that this should be so. For never was there a time when the medical voice was more needed in our national counsels. But the arduous and exacting demands of medical practice are incompatible for the most part with the pursuit of any other occupation which calls for stated hours of attendance and whose claims cannot be laid aside and taken up as leisure may permit. If the medical practitioner enters politics young and works his way up, as a rule he must lose his grip on practice. The position is extremely rare, while the more such a man progresses in general politics the less is his opinion a particularly authoritative one on medical matters. If the practitioner enters the House of Commons when he has attained to the zenith of his fame, he rarely influences its decisions to any large extent, though this is a thing which the spread of knowledge may be altering. In recent years Sir J. BATTY TUKE has rendered very valuable help, not only to general and educational causes, but particularly to medicine, in relation to such matters as vaccination, unlicensed practice, habitual inebriates, and the medical services of the army and navy; and though perhaps to a lesser degree, so also did the late Sir WILLIAM PRIESTLEY; and both these medical men were famous in their own spheres before they became Members. Whenever a man of fitting calibre, trained in the methods of science and having the breadth of view, the grasp of social conditions among all classes that the practice of medicine conscientiously pursued must bring, can see his way to embark on public service in the House of Commons, it must undoubtedly redound to the general good; but the combination of circumstances does not sufficiently often arise. The change of our political system from one of government by individual representatives to that by a party machine, where delegates must subordinate their own intellectual equipment and principles of action to party dominance, based on intellectual and moral standards that are far from lofty, militates against the work of a medical Member; such a Member can be of great service indirectly by assisting to enlighten his colleagues on matters concerning which, in the nature of things, they can know little or nothing, but it is hard for him to sway legislation when great principles are involved. It is good for the House of Commons to have some medical men in prominent places, especially in this age when social questions more or less directly and intimately bound up with medicine bulk so largely in the programmes of both the political parties, and this being so it is unfortunate that the circumstances of professional life prevent more representative medical men from entering Parliament.

The antagonism of the public to the medical politician, based on the fear of a medical tyranny, was ably discussed by Lord ILKESTON in his address as president of the Section of Public Medicine at the meeting of the British Medical Association in 1892. He clearly indicated the difference between the conditions in the past, which rendered possible the domination of a clerical priesthood, and the supervision by the medical profession of matters relating to the public welfare, medical and socio-economic, which

might occur to-day. Such supervision could hardly be called tyranny, because it must be exercised by local authorities elected by the people themselves, who would control and direct the functions of their officers towards the common good rather than to the triumph of particular opinions. Any public danger arising out of a greater participation by medical men in the legislature is not conceivable. If the medical man himself is willing partially to abandon the practice of his profession at a period when he has acquired those advantages of training which hold out promise of a brilliant future in medicine and also presage a period of special utility in Parliament—in other words, if he enters Parliament young—he may well become a force for good, but his connexion with medicine will grow weaker as his public position grows stronger. The chances of the distinguished man as an influence in the House of Commons are growing better, we think, but more cannot be said of them yet. Often we have been pressed to advocate the standing for Parliamentary position of many medical men, with the idea that the House of Commons would thus become possessed, through advice within its own fold, of the true medical views on social questions. The result is much to be desired, but how the seats are to be obtained is not easy to see, for "Medicine and the Right" would, as yet, make no good cry at an election.

## The Etiology of Endemic Goitre.

DISEASES of the thyroid gland have received much greater consideration and more critical examination since the important functions of this body have been established. The light thrown upon them by the study of myxœdema and cretinism has had far-reaching results, and has focused attention upon other diseases of the thyroid, of which none is more widespread or more important than goitre, which is responsible in most of its forms for much discomfort and disability, and in some cases for serious consequences. The endemicity of goitre in certain regions would naturally tend to direct attention to the water and the soil in these districts as possible factors in its production, and it is not surprising that many of the views put forward in explanation of its causation should be directly or indirectly concerned with one or other of these. At the same time, it must be confessed that up to the present no theory put forward has achieved general acceptance. The whole subject has been reviewed, and some interesting, striking, and suggestive observations have been made by Major ROBERT MCCARRISON, I.M.S., whose concluding Milroy lectures, delivered before the Royal College of Physicians of London, appear in the present issue of THE LANCET, while the lectures have also been amplified and published in a well-illustrated monograph,[1] of which we have received a copy.

Major MCCARRISON began his lectures by stating that he had had the fortune to reside for some ten years in a part of India where goitre and cretinism prevail with great intensity; moreover, the locality is probably one of the purest regions of endemic goitre in the world. To this we may add that it is fortunate also that he was gifted with the spirit of inquiry and with patience, energy, and scientific zeal to avail himself of the special opportunities thus offered for research into the etiology and pathology of the disease. The place in which his most important observations were made comprises the districts of Chitral and Gilgit, and is situated in that part of the Western Himalayas known as the Hindu Khush. He has described graphically the characters of these districts both in regard to their geological formations, their soil, and water-supply, and refers to the customs and mode of life of the people inhabiting them. In this district Major MCCARRISON has made a large number of observations, both clinical and experimental, which, taken in conjunction with an exhaustive and critical examination of the voluminous literature of the subject, have led him to the conclusions that endemic goitre is due to a living excitant or *contagium vivum*, and that the various conditions which have hitherto been regarded as causing the disease are such as favour the growth, development, and ingestion of this causal organism. For the detailed evidence upon which this view is based the lectures must be consulted, but the main outlines are of such interest as to merit recapitulation. An interesting map showing the distribution of endemic goitre in the world demonstrates very clearly its marked association with mountainous regions and its special prevalence in temperate and sub-tropical zones. These facts have led to many speculations and suggestions as to its causation, which are summarised and discussed critically by Major MCCARRISON, with the object of proving that they are all insufficient or untenable. He then examines the influence of race, predisposition, occupation, and social state upon the incidence of the disease and finds that all races are liable to it, that a family predisposition or hereditary tendency exists, although this may be explained as a result of increased liability to infection. He also notes that occupation seems to be of importance in the incidence of the disease, since this is greater among the labouring classes and those who cultivate the soil, while it is less frequent among the ruling chiefs, the clerks, shopkeepers, and merchants. It is also noteworthy that the endemic of goitre prevails with different degrees of intensity in different countries and in different parts of the same country—indeed, even in villages situated adjacent to one another. There appears to be a definite seasonal variation in the prevalence of goitre in regions where it is endemic; for example, in Chitral and Gilgit new goitres arise and enlargements of pre-existing goitres occur during the spring and autumn months. It would seem that when the water-supply becomes flooded with the washings from the cultivated fields owing to the rains, and when the people are attacked by other endemic diseases, the agencies producing goitre are most active. Again, the occurrence of epidemics of goitre in endemic centres is also a fact to be borne in mind in connexion with the etiology of the disease. A further point of interest is the occurrence of goitre in animals in regions where the disease is endemic in man, more especially in mules, horses, and dogs. Major MCCARRISON, however, found no case among 567 animals examined in Gilgit. Among other secondary or predisposing factors in the etiology of the disease to which he refers, we

[1] The Etiology of Endemic Goitre. By Robert McCarrison, M.D. R.U.I., M.R.C.P. Lond. London: John Bale, Sons, and Danielsson, Limited. 1913. Pp. 216. Price 10*s.* 6*d.* net.

may mention those directly influencing the gland itself, so that it is less able to counteract the toxic agent without undergoing hypertrophy, such as puberty, pregnancy, defective hygienic conditions, infective disease, and emotional states. It appears also to be definitely established that an organically impure water favours the development of the disease, and that water containing lime may possibly exert an influence in this direction.

In his endeavours to discover the actual exciting cause of goitre Major MCCARRISON has paid special attention to water and soil. He refers in some detail to instances on record of waters in various widely distant parts of the world accredited with goitre-producing properties, and then proceeds to record his own observations, which have demonstrated that the residue separated by filtration from the water-supply of Kashrote, one of the most goitre-ridden villages in his district, is capable of producing goitre in man under experimentally controlled conditions usually on about the fifteenth day. RÉPIN and BIRCHER have recently succeeded independently in producing goitre in rats by giving them water from notoriously goitrous districts. The influence of soil and geological formation has been studied at considerable length, and it is found that although goitre is most commonly associated with limestone and dolomite formations and with marine deposits generally, it can and does occur on almost every other geological formation. It is also shown by Major MCCARRISON that chemical substances in water, such as lime and magnesium, are not the causal agencies, since goitre is known to occur in districts where rain-water only is drunk. From a consideration of the results of his own experiments with the Kashrote water, including the production of goitre in himself as one of them, Major MCCARRISON concludes that thyroid enlargement can be experimentally produced in man within a few weeks by the administration of the suspended matter separated by filtration from goitre-producing waters, but that boiling this residue deprives it of this property, and that filtration through a Berkefeld filter probably does the same, since with water so treated he did not succeed in producing goitre within the limits of the 55 days it was employed. It is on the basis of these facts and of a review of the data concerning the etiology of the disease to which we have briefly referred that Major MCCARRISON rests his contention that the cause of goitre is the presence in suspension in water of a living agent, a view which is supported by the experiments of BIRCHER on rats carried out subsequently to his own observations. But the soil as well as the water-supply may be a vehicle of contagion of this living excitant, and possibly a direct infection by contact may occur.

Attempts to isolate the supposed living agent have so far failed, but it is shown that goitre-producing waters are pre-eminently those in which micro-organisms can thrive. Although blood changes of a fairly definite character are to be found in goitre, Major MCCARRISON has to admit that neither he nor other observers have been able to obtain micro-organisms from the thyroid except in acute inflammatory conditions. He brings forward evidence suggesting that the intestinal tract is the seat of infection. The evidence consists in the main of the beneficial effects of intestinal antiseptics, such as salol and thymol, in the treatment of goitre, and the good results obtained with vaccines prepared from organisms which normally occur in the bowel, and from the mixed organisms cultivated on Musgrave's medium from the fæces of goitrous individuals. Major MCCARRISON has followed up this suggestion by attempting to transmit goitre to animals, notably goats, by infecting their water-supply through the medium of patients suffering from goitre, and has obtained enlargements of the thyroid glands in as many as 50 per cent. of them. The chain of evidence brought forward with such skill by Major MCCARRISON, though highly suggestive, must be regarded as incomplete until the living causal agent is actually isolated and its pathogenicity established. Meanwhile he is to be congratulated upon the use he has made of his opportunities and upon the success which has apparently attended measures of prevention and treatment based upon his hypothesis as to the causation of the disease. It is to be hoped that he will continue his researches and that other observers will follow up the suggestive lines of research which he has opened out.

## Vaccination and the Medical Education of the People.

AT the annual dinner of the Association of Public Vaccinators of England and Wales, of which a short note appears in another column, three speakers—viz., the President of the Association (Mr. ARTHUR MAUDE), Sir JAMES CRICHTON-BROWNE, and Surgeon-General G. J. H. EVATT—in weighty and well-considered words, and approaching the subject along different routes, insisted upon the vast importance of the education of the people in medical truths. It was natural, seeing the occasion of the dinner, that the common text of all speakers should be the dangerous laxity of existing vaccination legislation. The attitude which, with the noble object of giving a greater measure of freedom and initiative to the people, has dictated our recent legislation with regard to vaccination was declared to be reckless in the extreme. But those who have not studied the subject carefully, who are not prepared to sift and deal with the masses of relevant statistics, and who are not fortified by acquaintance with the latest scientific teachings, can hardly be expected to share this disquieting belief. For we are secured to a great extent from epidemic attacks of small-pox by the most efficient public health service in the world, and this security is assisted by a level of domestic decency and of material comfort which, however deplorable the lapses from this level may be in too many localities, is yet far higher than the standard prevalent in most other countries—countries where a sparser population and a less complicated system of commercial enterprise exist. Relying thus on our vast and elaborate system for the maintenance of the public health, we are allowing to accumulate amongst us masses of explosive material from which trails are laid throughout the whole of the country, and of these only one may require a light to cause a disastrous and general conflagration. As long as the outbreaks are sma'l, and as long as the early

cases can be swiftly detected, so long can the spread of infection be limited with some approach to certainty, notification and segregation being sufficient for the purpose. So effective are these two measures, taken in conjunction with our fairly satisfactory sanitary conditions at large, that already many beds originally allocated for the treatment of small-pox have been devoted to other purposes by various authorities, and no one can say that this policy is other than economical. But if some of these small explosions, occurring in the centre of a highly inflammable population, should refuse to be stamped out, and the flame should burst through our protective cordons and rush into the general territory beyond, no one can say where the mischief may end.

Here—that is, in the magnitude of the disaster that we may be courting—lies the danger of actively opposing vaccination, and lies also the reproach of those who have too lightly yielded to the fears of unpopularity, or have allowed themselves to remain in ignorance of the facts. The wisdom of systematic vaccination and revaccination depends upon a series of facts which are not comprehended by the people, but which should receive the attention of their leaders and representatives. Many prefer to submitting to vaccination the freedom, as they consider it, of remaining in an inflammable condition. They enjoy a system of protection which is admirable so long as no great danger arises, and they prefer this modified safety to the basic security of making themselves uninflammable. We agree with the protagonists of the Association of Public Vaccinators that the public is not properly informed, and that it has selected its course accordingly. The position requires to be temperately but anxiously placed before the people in a systematic manner; a course of education in vaccination should be attempted, similar to the courses upon eugenics, rearing of infants, and domestic hygiene, which are from time to time announced in our columns. Primarily, that education must come from the medical profession, but secondly, the coöperation of the public is required for the enlightenment of the public. Those members of the public whose advantages in education, and whose development of reasoning power allow them to perceive the danger of the present condition of affairs should be asked to awaken the communities in which they live to this danger. Such assistance from laymen would remove from the educational campaign any suspicion that its teachings emanated only from the medical profession and represented merely an attempt on the part of that profession to maintain a belief founded rather upon tradition than upon circumstances as they are.

The members of the Association of Public Vaccinators, acting here for all medical practitioners and not in any selfish or official spirit, have been, and are, doing their best to disseminate the facts about vaccination. They make known to the best of their ability the position of modern vaccination, showing that while its practice can be supported by masses of unassailable figures, its theory, now that the value of Dr. S. MONCKTON COPEMAN'S labours has been appreciated, is equally unassailable from a scientific point of view. But the Association of Public Vaccinators is not a large or wealthy body, and nothing like a system of popular education can be carried on through its endeavours alone, however devoted. In Germany the work of instruction is done largely by the State, and the German mind finds it completely ridiculous that we in this country—the country where Eastern wisdom in regard to the treatment of small-pox was first turned by Western minds into a practical direction—should be content to leave our inhabitants so ignorant of the facts about vaccination and so free to do as they please that a vast proportion of our population is now not really protected from small-pox.

# Annotations.

"Ne quid nimis."

## CONDUCT AND CHARACTER.

THE Birmingham Studies in Social Economics [1] are the outcome of the inquiries of students working for the social study higher diploma or for the higher degrees of that University. The University directs a course of preparation for public and social service which combines systematic instruction with practical training under supervision in the city. The first of these studies is an essay which is considered by Dr. J. Rendel Harris to be more than an academic dissertation; a real contribution to a very pressing problem—that of raising the children of the drunken and dissolute from the place of their degradation to higher planes of social life and worthiness, where it is expected they will when old enough be able to maintain themselves unaided. Miss Thomson attempts to apply the test of statistical experiment to the problem and to find out for us whether environment is able to unsay what heredity has been proclaiming *ore rotundo*. She has studied the records of a few industrial schools and orphanages, and has taken as her standard of efficiency Mr. Charles Booth's classification ("Labour and Life of the People"). This classification passes from Class A, which consists of "some occasional labourers, street sellers, loafers, criminals, and semi-criminals," through C and D, below and upon the poverty line, up to H, "the servant-keeping class." Her chief purpose is to show the overwhelming part played by environment in the building up of human efficiency, and her statistics show that 72 per cent. of rescued children have justified the expectations formed for them, and of the remainder 13 per cent. failed for reasons of mental rather than moral deficiency. It is very encouraging to see such statistics, which, owing to the care expended on the examination of them, may be taken as representing the actual facts. They justify the very general opinion that of all forms of charity that which is directed to the rescue of waifs and strays is fraught with the most fruitful benefit. They also justify our industrial school system when these schools are conducted by kindly and competent people. The author is, however, anxious to claim more for them than merely this, and we would be over ready to allow her claims if we could do so in the purely scientific atmosphere in which our labours are conducted. Just as insanity may be really "disorder of the mind," but, so far as it practically concerns the social body, is undoubtedly "disorder of conduct," so, as Professor F. W. Mott has recently pointed out in his studies of pedigrees, may prudent conduct mask the

[1] Environment and Efficiency. By Mary Horner Thomson. With a Preface by J. Rendel Harris, LL.D. (Birmingham Studies in Social Economics, &c.). London: Longmans, Green, and Co. 1912. Pp. 100. Price 2s. net.

existence of extreme degeneracy of character. Unfortunately for the advocates of environment, character it is that is transmitted and not conduct. Without the saving grace of prudence much that is defective in character would see the light. When standards of efficiency are adopted which, serviceable as they may be for sociological purposes, have not been subjected to scrutiny from the biometrical standpoint, they will prove false guides in any attempt to measure the proportional values of heredity, function, and environment—"what the living creature is, or has to start with, in virtue of its hereditary relation, what it does in the course of its activity, what surrounding influences play upon it—the three determining factors of life." The offspring of the prince and the prostitute, although he may find himself in Mr. Booth's Class A, is not therefore to be classed as a degenerate; nor is the flourishing citizen, the man who by energy, foresight, and hard work has raised himself to the classes above H, necessarily free from degeneracy of the worst type. On the other hand, the social-reforming eugenists are also in need of the warning that these biometrical investigations are not yet out of the scientific laboratory, and are in no sense ready for the political workshop.

## JANUARY AT HOME AND ABROAD.

IN spite of some cold days in the central and northern parts of the kingdom and a few rather cold ones in the south the mean temperature of the month was above the normal. The divergence was much less marked than during December, but several days and also nights were unusually warm for the time of year, the temperature of the afternoons being but little below 50° over a large portion of the country, and frost at night being seldom experienced. As in November and December, the general drift of air was from some point between south and west, and the arrival of a series of cyclonic disturbances from the Atlantic maintained a high average velocity, while on some occasions the gales on the coasts and out at sea were extremely violent. In these circumstances rain was naturally very frequent and general, and often heavy, but it was sometimes so slight that a fall of several hours' duration yielded a very small quantity in the gauge. No snow worth mention fell south of the Thames valley, but in the north the ground was sometimes covered to a depth of several inches; in the north-east of England the average depth was a foot about the middle of the month. The number of days that passed without more or less rain was remarkably small in the west and south-west, and over the kingdom generally the number of dry days was much lower than usual. At Newquay there was rain on every day but one, and at Scilly on every day but two, while in the London district and the Midlands the number of rainy days was about 21, or six more than the average. Over a large portion of central and southern England the total fall exceeded the normal by more than an inch, and in many localities in the south-west and west the excess was between 2 and 3 inches. In the metropolitan area the temperature was rather more than 2° above the average, the maximum readings being 3° and the minimum readings 2° above. On several afternoons the temperature rose to about 50°, and at Kew Observatory the mean maximum warmth was 46°. On only seven nights was there frost by the screened thermometer, and the mean minimum temperature was as high as 36°. The coldest snap occurred on the 13th and 14th, when the thermometer fell to 24° at Kew, and at that period frost continued throughout the 24 hours over a large portion of the country. The Midland counties of England were about 3° colder than London, both during the day and night, while the south-west of England was warmer, especially at night. At Newquay the mean maximum temperature was 49°, or 3° higher than at Kew, and at Scilly 50½°, while the mean minimum at Newquay was 4° higher than at Kew, and that at Scilly as much as 7° higher. At Newquay the screened thermometer only went slightly below freezing-point on two nights, and at Scilly it remained above it throughout the month. In central England frosts were more numerous. At Nottingham frosts were recorded by the screened thermometer on 13 nights, and on the 14th the low figure of 16° was reached. At Bath frost occurred on 11 nights, but the most severe was only 5° below freezing-point. At Kew observatory the rainfall, divided between 21 days, amounted to 2·6 inches, or 0·8 inch above the average. On many occasions the fall was very slight. Eleven days gave less than 0·1 inch, and on four the fall was only 0·01 inch, while the largest quantity in any 24-hour period was 0·38 in. on the 22nd. Considering the frequency of the rain and the generally unsettled condition of the weather the duration of sunshine for the month was not small in the south and south-east of England. At Kew the record was 41 hours, only one hour less than the normal, and at Greenwich it was as high as 54 hours, or 12 hours above the normal. Westminster also had more than the normal, a total of 30 hours against an average of only 19. The figure of 30 hours was also recorded at Hampstead. For once in a way the northern suburb appears to have been less bright, relatively, than the more central and low-lying districts. In the City of London, where the average is 15 hours, there were no more than 13¼ hours. On the south coast the figure at some of the resorts was lower than at Greenwich, and not much higher than at Kew. At Brighton the aggregate was 49 hours, or 5 hours less than the average, and at Bournemouth it was 47 hours. At Newquay the record was 50 hours, and at Scilly 55 hours. Bath was comparatively dull, with a total of 33 hours, and Nottingham could count no more than 25 hours. On the continent, as in this country, the temperature was above the January normal. Paris had a mean maximum of 48°, and a mean minimum of 37°, both values being higher than at Kew; and at Berlin, where frost was very frequent, the mean maximum was 36°, and the mean minimum 28°. About the middle of the month, as well as at the end, the frost was very severe. No rain or snow fell at Berlin until after the 16th, and the total measured subsequently was no more than 1·2 inches, but at Paris the total rain amounted to 2·9 inches, and fell on 18 days. Paris was also more cloudy than usual, its aggregate sunshine being 49 hours—less than at Greenwich. In the more southern regions the coastal resorts experienced no cold weather. Nice enjoyed a mean maximum temperature of 53° and a mean minimum of 40°. It will be noticed that while the mean maximum was 2·5° higher than at Scilly and 4° higher than at Newquay, the minimum was lower than at the former spot and no higher than at the latter. Much sunshine was experienced and scarcely any rain, only five rain days giving a total of 1·65 inches. Biarritz was much warmer than the Riviera, its mean maximum temperature being 56° and its mean minimum 46°. There was, however, less sunshine and there were more rainy days. As many as 12 days brought more or less rain, and the total amounted to 3·16 inches. On several occasions the shaded thermometer rose above 60°, and at times the nights were no cooler than 50°. The greater part of the coast of Italy experienced a similar temperature as Nice, but rain was somewhat more frequent and the sky less consistently clear. Over the inland regions of the north frost was often recorded, and the south was not so warm as Biarritz. At

Funchal it rained on only four days, and the total was no more than 0·4 inch. Every day the temperature rose above 60° in the shade, giving a mean maximum of 64·5°, while the nights were sometimes as mild as 50° and the mean minimum temperature no lower than 48°. Switzerland was occasionally too mild for winter sports even at the mountain resorts, and the valleys experienced rain and sleet nearly as frequently as snow. Considered generally, the weather in that country was milder than usual and less fine.

## THE LONDON MILK-SUPPLY.

IN its quarterly report as to action taken under the London County Council General Powers Act, 1907, relative to the milk-supply, the Public Health Committee reported to the Council on Feb. 4th that during the three months ended Dec. 31st, 1912, 720 samples of milk were taken at London railway termini. The examination of 772 samples (some taken in the previous quarter) was completed, and 51, or 6·6 per cent., proved tuberculous. Of 3589 cows examined at various farms throughout the country, 15, or 0·4 per cent., were found to be suffering from tuberculosis, and the sale of milk from these cows in the county of London was stopped. The committee stated that since the Act came into operation on July 1st, 1908, the examination of 10,638 samples of milk had been completed, 1071, or 10·1 per cent., proving tuberculous. Of 55,947 cows examined, 637, or 1·1 per cent., were found to be affected by tuberculosis of the udder. Commenting on the announcement that the Milk and Dairies Bill, 1912, had been dropped, the Public Health Committee reviewed the efforts that have been made every year since 1907 to obtain for London powers to deal with milk contaminated with dirt and filth, the Council's proposals being withdrawn time after time on a promise of general legislation by the Government. In view of the urgent necessity for action the committee regarded it as a matter for extreme regret that another session had passed without any real efforts being made to deal with the subject of the milk-supply, and that the Prime Minister had stated that he was not prepared to give any pledge that facilities would be afforded for the Milk and Dairies Bill in the next session of Parliament.

## SERUM TREATMENT IN MELÆNA NEONATORUM.

IT is not to be wondered at that in recent years a good deal of attention has been paid to that mysterious and calamitous malady, spontaneous hæmorrhage in the new-born infant. The tantalising obscurity of its origin, the rapidity with which a child otherwise perfectly developed is carried off, and the futility of most of the methods of treatment hitherto adopted, all combine to render this subject one which invites close scrutiny and thorough investigation. Dr. R. Franz, writing of the cases treated in the gynæcological clinic of the University of Graz, in which he is an assistant, in the *Münchener Medizinische Wochenschrift*, Dec. 31st, 1912, gives a catalogue of the various drugs which have been employed, and finds little cause for congratulation in any. Even the use of gelatin, which has been so favourably described by some writers, did not avail to reduce the mortality; out of eight cases so treated five ended fatally. He truly says that these unsatisfactory results are the less to be wondered at when the lack of knowledge as to the etiology of the disease is taken into consideration, and proceeds to divide the cases into two groups—those in which the hæmorrhage stands alone and may be termed idiopathic, and those in which it is but one symptom of a general disorder, such as septic or syphilitic infection. It is the former group to which the paper is chiefly devoted. In these cases the blood comes sometimes from a definite ulcer, at others from an apparently intact gastro-intestinal mucous membrane. Acting on the belief that, in some instances at any rate, the immediate cause of the hæmorrhage is a deficiency in the coagulating elements of the blood, various clinicians have made use of defibrinated blood and also of fresh serum in the treatment of this as well as of allied conditions, such as hæmophilia. Dr. Franz has followed this line of action, using normal human serum. He makes use of the blood derived from section of the umbilical cord after healthy confinements, separating the serum by centrifugalisation and storing it in hermetically sealed flasks. The dose employed varied from 10 to 25 c.c., and in several cases two doses were given. The serum was introduced by subcutaneous injection into the lower abdominal wall. No untoward effects, such as the local ecchymosis recorded in some cases of hæmophilia, were noted by Dr. Franz. The sharp rise of temperature which occurred in one or two instances was quite transitory and unaccompanied by any other evidence of harmful reaction. Five cases in all were treated by this method, and the results were eminently satisfactory, every one of the children surviving, and the hæmorrhage ceasing in each case. It seems, therefore, that this is pre-eminently the method to adopt when confronted by this alarming condition—at any rate, no other plan of treatment has been so successful.

## LUBRICATION AND THE VOICE.

THE reason why birds sing has been variously explained. Those inveterate anthropomorphists, the poets, with Shelley at their head, suppose them to sing for sufficiently complex human reasons. They mostly imagine them to have arrived at the idea of a Creator—an idea really only attained quite late in the course of man's evolution—and they suppose their songs to be mainly expressive of praise and thanksgiving. The more gloomy Darwinians suppose that birds sing for no particular reason, but that the singing birds, through dint of attracting the non-singing females of their tribe to their sides, have in the course of ages tended to survive, while the silent males have tended to become extinct. It has been left to a writer in the *Morningside Mirror* to advance what strikes us as an entirely new and extremely plausible theory for the song of birds. Birds sing, says this theorist, who is also a very neat versifier (C. Dalreme by name), because they are cheerful and because their throats have been lubricated by drink. "Singers need plenty to drink, whether they are birds or human beings. This is evidenced by the merry noise in our gardens immediately after the heavy rains in July. It is then the birds have been getting a good drink." The same ingenious writer, with the help of thoroughly soaked bread, has persuaded birds to sing right into the middle of the winter, the bread "being as good as a drink of rain to them." Physiologists may perhaps be able to explain why some races of mankind are talkative and tuneful and others silent. Celtic races, living in damp climates and not unacquainted with the influence of liquor, are variously noted for their beautiful singing voices or for their great conversational powers. On the other hand, some morose and also hard-drinking races are pretty fairly silent, and popular wisdom supposes a man of few words to be likewise one of deep potatory powers. The question has manifestly not been thought out. The ancient Scandinavians were shockingly hard drinkers, and they represented Odin as eating nothing, but as subsisting in Valhalla entirely on wine. The Lesser or Prose Edda, which is the bible of the ancient Vikings, is a curiously [silent book in the sense that song and singing, if we remember rightly, are scarcely, if ever, mentioned there. Neither is the "Mabinogion," though blaringly full of the

sense of colour—vermilion and gold running riot throughout it—if we remember our early readings, much concerned with the human voice, yet the old Celtic heroes were as given to the wine-cup as Odin himself. Wine and song, in popular philosophy, have always been twin brothers, despite the silence of Teutonic and Cymric classics. Wine implies excitement, and the true originality of the latest suggestion concerning the singing of birds lies in this that song depends on a lubricant rather than on an intoxicant.

## INJURY AND PULMONARY TUBERCULOSIS.

A CONNEXION between pulmonary tuberculosis and injury has been asserted by some writers. Mendelssohn has recorded 9 cases and collected 17 others in which injuries to the chest of various kinds were followed by pulmonary tuberculosis. In some hæmoptysis occurred at the time of the injury or soon afterwards; in others cough and pleurisy ensued within a few days or weeks. Mendelssohn's theory is that in such cases the lung is lacerated or contused and becomes infiltrated with blood or inflammatory products. These favour the growth of tubercle bacilli, which he assumes to be more or less ubiquitous. On the other hand, Dr. Percy Kidd believes, in consequence of the rapidity with which pulmonary symptoms appear, that the injury rouses into activity some latent tuberculous focus, possibly by lacerating its capsule. In the *Boston Medical and Surgical Journal* of Jan. 16th Dr. J. W. Hawes, secretary of the Board of Trustees, Massachusetts Hospitals for Consumptives, and Mr. A. Drinkwater, an attorney and a member of the Board, have brought forward some new evidence, and discussed the question from the legal aspect. The legislation of recent years which makes employers liable for the consequences of accidents to their employees gives an additional interest to the question. They first discuss some cases reported by Dr. C. C. MacCorison, superintendent of the North Reading Sanatorium. In 6 cases out of 175 he found that the patients connected their disease with an injury. In one a man was examined at the Massachusetts General Hospital in June, 1910, as a matter of routine, and told that his lungs were perfectly sound. He was in good health and so continued until Feb. 12th, 1911, when he was hit on the chest in a fight and fell unconscious from the blow. A week later the cervical glands swelled rapidly, and in March tuberculosis was found in the lungs. In the other 5 cases there was a considerable interval between the injury and the development of the disease, and therefore the evidence of a connexion is unconvincing. The following case, reported by Dr. Hawes, appears to be a striking example of such a connexion. In October, 1908, while on duty on a motor-cycle, a policeman in excellent health sustained an accident and hurt his right side severely. Immediately he suffered from hæmoptysis, which continued until the next day. For a long time after the accident he had pain in the right side, and he never felt as well as before. He suffered from slight cough and occasional hæmoptysis, and constantly lost weight and strength. However, he continued on duty until March, 1909. From this time until August he was treated by a practitioner who told him that he was not suffering from tuberculosis. However, in August he was examined by three specialists, who found tuberculosis of the right lung. After that the disease rapidly developed. Dr. Hawes was asked to investigate the question whether he should receive a pension based on the fact that his condition was due to the accident while on duty. In view of the fact that medical examination had shown that he was in perfect health previously and was exceptionally strong, Dr. Hawes reported that the disease was directly due to the accident. There is another class of case in which the injury is not to the chest, but to another part of the body. Here the question of a connexion is far more difficult. The following is an example. A married woman, aged 22 years, had been examined many times during minor illnesses by her family doctor and found to have perfectly sound lungs. In September, 1909, while leaving a tramcar, her hand was slammed in the sliding door and severely crushed. She was taken to hospital, where it was found that a miscarriage had taken place. After treatment she returned home. She continued to lose blood off and on for two months and did not regain her usual health. In January, 1910, she developed a cough, and in March was found to be suffering from pulmonary tuberculosis. In an action for damages Dr. Hawes gave evidence to the effect that the tuberculosis was directly connected with the accident. The jury awarded damages, and the Supreme Court upheld this verdict. Recently the Supreme Court of Minnesota gave damages for the injured persons following circumstances. A robust man, aged 43 years, in perfect health, according to good medical evidence, received a severe injury to the head. There was considerable shock and concussion for which he was confined to hospital for a month. He steadily lost health and strength, and soon developed consumption, from which he died eight months later. For the defence it was argued that men of robust health are often attacked by consumption. The Court, however, decided that the evidence was sufficient to sustain a finding that the injuries sustained were the proximate cause of death.

## THE TREATMENT OF DISSEMINATED SCLEROSIS WITH INJECTIONS OF FIBROLYSIN.

DISSEMINATED sclerosis, one of the very commonest diseases of the central nervous system, is at present enshrouded in obscurity as far as its exact etiology is concerned, and the chapter of its rational therapeutics, therefore, still remains to be written. As a consequence, innumerable medicaments have been and are being tried in this affection, but the specific, if there is one, has not yet been discovered. During the last five years Dr. Nonne, of Hamburg, has used injections of fibrolysin in a large number of cases with satisfactory results, but his endeavours do not appear to have aroused much interest either by way of criticism or corroboration. One of his assistants, Dr. Max Fraenkel, has published in the *Neurologisches Centralblatt* for January some account of his experiences with this drug in 75 cases of disseminated sclerosis, taken partly from Dr. Nonne's private and partly from his hospital practice. Merck's ampulles each contain 2·3 c.c. of fibrolysin, which is a combination of thiosinamine and sodium salicylate; this amount was injected into the gluteal region every three or four days for six weeks at a time. Of the 75 cases, 54 were hospital patients and 21 private. Of the former, 19, and of the latter 14, were uninfluenced by the treatment; 15 showed a certain amount of improvement, estimated by actual improvement in the physical and objective signs of the affection, and not merely by the patients declaring themselves better and stronger. In no less than 27, however, the results obtained were apparently very satisfactory, inasmuch as various objective symptoms and signs entirely disappeared. In several cases a return of certain symptoms was met by resorting to the treatment again, with notable improvement almost immediately. Dr. Fraenkel says that the injections can be carried out over a much longer period than six weeks without difficulty or danger. Whether there is a relation of cause and effect between the injections of fibrolysin and the subsequent improvement is, of course, not to be lightly decided, for it is notorious that many cases of the disease show remarkable remissions, while in others

very long intervals elapse between the appearance of the various symptoms. Further, the effect of fibrolysin on other morbid conditions (cicatrices, contractures, fibrosis, and strictures) is not clear, and even assuming the reality of its action on fibrous tissue we do not know that it possesses a similar action on glial tissue.

## GASTRIC SYMPTOMS DUE TO COLONIC STASIS.

THE doctrine that serious symptoms may follow chronic stasis of the contents of the colon is well known in this country, mainly through the stalwart advocacy of Mr. W. Arbuthnot Lane, while it is held widely in America. An interesting case is reported in the letter from our Paris correspondent in which severe gastric symptoms were present and were thought to be due to a gastric ulcer, for there was vomiting, and pain supervened two or three hours after a meal. An X ray examination showed that a bismuth meal stayed for two or three days in the cæcum. To remedy this condition an ileosigmoidostomy was done, but the symptoms were not relieved. A subsequent colectomy, however, was followed by rapid recovery. Few will be found to dispute that in some cases there is a very definite connexion between gastric symptoms and colonic stasis, and the case recorded from Paris proves that the removal of the colonic stasis may be followed by restoration to health. Opinions, of course, differ widely as to the proportion of cases in which it is necessary to perform an ileosigmoidostomy or to resect a portion of the large intestine for obstinate constipation. It seems at present wiser to keep to the *via media*, but such earnest attention is now being paid to the subject that in time we shall be able to recognise with far greater certainty in what cases operative interference is desirable.

## THE BACTERIOLOGY OF PERITONITIS.

IN the *American Journal of the Medical Sciences* for October, 1912, Dr. Morris Fishbein has published an important paper on the bacteriology of peritonitis based on bacteriological examination of material obtained from the peritoneal cavity after death in cases of peritonitis at the Rush Medical College, Chicago, and on previous work on the subject by two American writers—Flexner and Manahan. Dr. Fishbein follows the classification of Flexner, who divides all cases of peritonitis into primary, exogenous, and endogenous. Primary peritonitis is due to previous chronic diseases or to an infectious focus in some other part of the body, from which the infecting organism is brought by the blood or lymph-channels to the peritoneum. Exogenous peritonitis is due to infection from wounds of the peritoneum, including laparotomy, or to septic abortion. Endogenous peritonitis is due to organisms coming from foci in relation to the peritoneal cavity, of which the most common is appendicitis. The nature of the inflammation—whether serous, fibrinous, purulent, or of other type—does not bear any relation to the nature of the primary lesion when such exists, nor does it seem to be influenced by the kind of bacteria present, whether alone or in combinations of various kinds. Adding together his own cases and those of the two previous writers Dr. Fishbein has analysed 342 cases. The organism most frequently found was the colon bacillus, which was present in 183 cases, and in 54 of these in pure culture, but in the majority of cases in combination with other organisms, such as staphylococci and streptococci. The other organisms were found in the following order of frequency: streptococcus, 143 cases; staphylococcus, 83; pneumococcus, 37; bacillus mucosus, 15; gas bacillus, 11; typhoid bacillus, 9; bacillus proteus, 9; bacillus pyocyaneus, 8; bacillus cloacæ, 3; micrococcus tetragenes, 2; bacillus lactis aerogenes, 1; bacillus paratyphosus, 1. In none of the cases was the gonococcus found. The pneumococcus seemed to be particularly associated with primary peritonitis. The typhoid bacillus was found both in cases in which there was perforation of the intestine and in which there was not. The cases in which there was no perforation may have been examples of primary peritonitis. The majority of cases of peritonitis were endogenous and due to a combination of the colon bacillus and other organisms, usually staphylococci and streptococci. With perfecting of aseptic operative technique exogenous peritonitis is becoming less common. In 25 per cent. of Dr. Fishbein's cases the peritonitis was primary. In practically all the resistance of the patient was lowered by some chronic condition, such as atrophic cirrhosis of the liver, chronic endocarditis and tonsillitis, marasmus or diabetes. In such condition the peritoneum fails to combat organisms brought to it by the blood stream. In other conditions, as when a suppurative focus exists in some other part of the body, as in acutely infected tonsils or an infected puerperal uterus, highly virulent organisms are poured into the blood and a terminal acute infection of the peritoneum occurs. To such causes the "idiopathic" peritonitis of the older writers is to be referred.

## TEACHING, LEARNING, AND LIFE.[1]

Edward Thring, the great headmaster of Uppingham School, has now been dead a quarter of a century, but the spirit of his teaching still survives, not only in the memories of those who came into actual contact with him, but in much of the work, constructional and theoretical, dealing with the education of this country. He was an extraordinarily simple single-minded man, determined to refound his old grammar school on the lines which he thought right, and to carry it on along those lines through good or ill report. He had sore troubles and not a few opponents, as every such enthusiast must have. He trampled on what he thought were idle prejudices, he did not mince words, occasionally he administered a justice whose roughness was more apparent than its purity, but the nobility of his motives, the courage of his actions, and his readiness to sacrifice all for his ideals were alike so obvious that he won support and admiration and following in the places where, if only where, he valued it. To medical men there is one episode in his career that should always appeal. When a severe epidemic of typhoid fever fell upon the school in its little Rutlandshire home, Thring, acting with the directness with which nowadays a military force would be ordered to evacuate an infected camp, mobilised his great school, the inhabitants of 12 boarding-houses, with a concourse of dependants, masters, servants, and attendants, and placed them within three weeks in a Welsh fishing village. And a few hours after the reassembly of the school, with the coöperation of a brave and sorely harried staff, he had invented a system of discipline so exactly suited to the new conditions, while founded on the old, that work and games alike went on with unbroken serenity. Thring's strenuous life of work and thought left little time for leisurely literary production, but he wrote two small books on education, setting out his reasons for his theories and practice, and published a volume of addresses and another of sermons. Many of his letters were published in an interesting but sorely belated biography, while he left behind him an unpublished manuscript entitled "Education and Idolatry." From this material H. and M.P., with the sanction of the surviving family, have selected certain passages illustrative of the nature of Thring's counsels. The work has been

[1] "Thoughts from the Writings of Edward Thring," collected and arranged by H. and M.P. London: H. R. Allenson, Limited, Racquet-court, Fleet-street, E.C. Pp. 67.

judiciously and piously done, while many of the pregnant sentences quoted should inspire the reader to consult the originals from which they have been taken. Says Thring, for example: "I do not mind whether things go entirely right or not. Nothing goes entirely right. Any fool can find fault. And road-makers cannot be so clean as those who walk on the roads they have made." Was ever the position of the mere critic compared in a happier way with that of the inventor, with, be it noticed, no undue laudation of the latter? This little book is full of similar aphorisms.

## THE GERMICIDAL PROPERTIES OF TOBACCO SMOKE.

IT is not surprising to learn that tobacco smoke is inimical to the activity of micro-organisms, since it contains, amongst many other things, pyridin, which has been shown to be a powerful germicide. Definite experiments have recently been made which show that tobacco smoke rapidly destroys in particular the comma bacillus of cholera. A good many years ago it was reported by the senior medical officer of Greenwich workhouse that the tobacco-smoking inmates enjoyed comparative immunity from epidemics, and tobacco-smoking was believed to have had a disinfectant action in cases of cholera and other infectious diseases. Again, during a cholera epidemic at Hamburg it was reported that not a single workman engaged in the cigar factory in that city was attacked by the disease. Later it was stated that amongst a body of 5000 cigarmakers only 8 cases and 4 deaths from cholera occurred. Subsequent experiments proved that tobacco smoke destroyed the bacilli of Asiatic cholera as well as pneumonia, and there was some evidence also that tobacco smoke was preventive of some forms of nasal catarrh. It is interesting to note that pyridin is official in the French pharmacopœia, and in France it has been employed in the form of inhalation in asthma, emphysema, and angina pectoris, and mixed with peppermint in diphtheria. Excessive tobacco-smoking, of course, may easily give rise to constitutional effects which diminish the resisting power of the body to disease, in which case it is probable the habit would afford not only no protection but an opening for invasion.

## ADRENAL HYPERNEPHROMA IN A YOUNG GIRL, WITH PRECOCIOUS DEVELOPMENT OF SEXUAL CHARACTERISTICS.

IN the recently issued annual volume of *Guy's Hospital Reports* is a brief paper by Dr. Herbert French on a rare condition, of which up to the present less than 20 cases have been recorded, where a tumour of the suprarenal cortex has been associated with abnormal development of the external genitalia and the characteristics of sex. Dr. French's patient was a little girl of 6½ years, who was admitted to Guy's Hospital on August 18th, 1910. She had always been a very healthy child, except that since she was 12 months old she had been subject to periodic attacks of vomiting several times a year, attacks which were gradually becoming more intense. In this little girl pubic hair began to develop when she was eight months old, and it increased in amount steadily for some years. There was none in the axillæ or on the face. For six months before admission she complained of pain in the left side of the body. She was found to be a healthy looking child, bright and intelligent, not unduly fat, with undeveloped breasts, but with a remarkable development of pubic hair and with an equally remarkable hypertrophy of the clitoris, which projected between the labia and separated them to a notable extent. A relatively large tumour was felt with ease in the left side of the abdomen, moving up and down with respiration, smooth and free from nodules, but very tender on the slightest pressure. It extended almost to the mid-line, above the umbilicus, and reached from the left hypochondrium into the left flank. There were definite indications that the tumour growth was compressing the lower lobe of the left lung. On Sept. 1st the little patient was operated on, and the mass was found to be a suprarenal tumour which almost completely surrounded the left kidney, making it impossible to remove one without the other. The suprarenal tumour was of a curious yellow ochre colour, very vascular and very soft. Although it was creeping down all over the capsule of the kidney, it did not invade the latter in any way. The kidney itself looked perfectly normal. The child died a few days later, when numerous secondary deposits, all yellow ochre in colour and varying in size from small dots to growths half an inch in diameter, were found scattered through the lungs. The uterus and ovaries were perfectly normal. Sections of the growth showed columns of large polyhedral cells, mostly arranged in a perivascular fashion. It may be described as a perithelioma of mesoblastic origin rather than a carcinoma.

## KERATODERMIA BLENNORRHAGICA.

Dr. H. Swift, of Adelaide, has given an account of a case of gonorrhœal keratodermia, the first recorded in Australia as far as he is aware, in the *Australasian Medical Gazette* of Nov. 30th, 1912. It is an extremely rare condition. The first example recorded in England was a patient of Dr. J. H. Sequeira, brought before the Royal Society of Medicine in March of last year. Dr. Swift's patient was a man, aged 35, who was admitted to hospital suffering from gonorrhœa with polyarthritis for the second time in six years. On the dorsu of each foot were a few discrete pustulous spots one-third to three-quarters of an inch in diameter; in the most recent the outer margin of the area of cuticle involved was raised very slightly by a thin layer of cloudy serum. The centre was yellow, convex, and raised, being in the process of becoming hardened. Later, the cuticular rim became broken, the centre being raised into a clear horn-like projection. Later still this centre became opaque, having an appearance not unlike that of a rupial crust. In their subsequent course these pustular areas displayed the tendency to incrustation in a very marked degree, and they also increased in size centrifugally. Fresh pustules produced on the shins and elsewhere by extrinsic causes took on similar keratotic characters. Attempts at discovering the gonococcus in the discharge from these cutaneous lesions proved abortive, and treatment by injection of stock gonococcus vaccines was quite futile. The patient's urethritis was, however, very persistent, and the condition conforms in all essentials to that described by other dermatologists as occurring in connexion with severe and generalised gonococcal infections. Treatment is usually unsatisfactory, though in one case, that recorded by Dr. Sequeira, the use of gonococcal vaccines proved highly effective in inducing a cure. Dr. Swift remarks on one curious point, the offensive smell of the patient's skin. This was so extreme that the man had to be isolated, and local applications of formaldehyde were necessary in order to mitigate the odour.

A DISCUSSION on Ventrifixation of the Uterus has been arranged to take place on Thursday, March 6th, in the Obstetrical and Gynæcological Section of the Royal Society of Medicine. The subject will be divided into three parts: (1) Indications for the Operation, to be opened by Dr. W. S. A. Griffith; (2) Varying Technique of the Operation, to be opened by Professor Henry Briggs (Liverpool); and (3) Clinical Results of the Operation, to be opened by Dr.

A. E. Giles. Anyone desiring to take part in the discussion should forward his or her name to one of the honorary secretaries, Dr. Walter Tate, 32, Queen Anne-street, W., or Dr. T. Watts Eden, 26, Queen Anne-street, W., not later than Saturday, March 1st.

## STILLBIRTHS IN RELATION TO INFANTILE MORTALITY.

*The Report of the Special Committee of the Royal Statistical Society on Infant Mortality.*

IN a recent number of THE LANCET[1] the appearance was announced of a remarkable report on infantile mortality, prepared by a special committee of the Royal Statistical Society.

For the first time in our experience the subject of mortality in early life is there discussed with reference to every important country in Europe and America. That the problem had never previously been treated with equal success, even in our own country, should imply no censure on modern medicine; for it is only very recently that means have been available for estimating the influence of stillbirths on mortality in early childhood, for which purpose facilities are now afforded under the Notification of Births Act. Again, the gradual and conspicuous advancement in every branch of sanitary knowledge must assuredly contribute to the greater accuracy of statistical returns. The special committee entrusted with the preparation of this report consisted of Sir William Dunbar, Sir Shirley Murphy, Dr. R. Dudfield, and Dr. J. H. C. Stevenson. On its publication in the preceding August it was known that the inquiry was incomplete, the belief being current that further developments would probably be announced at no distant date.

*Discussion on the Report.*

The discussion on this report, which is summarised in the present article, was opened at the Statistical Society's rooms by Dr. Reginald Dudfield on Nov. 19th at the request of the council, who rightly judged that his experience as chairman of the special committee eminently fitted him for the task. It is due to Dr. Dudfield to state that, in addition to the ordinary duties of the chair, he undertook the whole of the correspondence, colonial and foreign as well as British, on the result of which the report was eventually framed. Of the magnitude of this task an idea may be formed from the fact that forms of inquiry were forwarded to the statistical authorities of not fewer than 136 States, and that replies have been received, tabulated and analysed, from 106 of that number.[2]

In all inquiries of this nature the importance of accurate definition is obviously paramount; but in the present case it is astonishing that the committee were unable to discover among the returns furnished by the colonial and foreign authorities evidence of the adoption in any country of a real definition either of "stillbirths" or of "stillborn"; the few authorities that have made the attempt having formulated expressions which lack the essentials of precise definition. In these circumstances the committee, whilst considering it inadvisable to adopt any one of the definitions before them, declared it to be imperative that an international definition of stillbirths should be authorised, and that all stillbirths should be registered. They further incorporated in their report a memorandum prepared by Dr. Dudfield, containing his personal suggestions with regard to the definition of the terms "stillbirth" and "stillborn," the committee adding the opinion that "those suggestions may serve as a useful base for future discussions."

Having perused the report and also Dr. Dudfield's comments thereupon, we think that he acted discreetly in confining himself almost entirely to one topic—namely, the relation of stillbirths to infantile mortality, although abundant material for many discussions might readily have been drawn from the same source.

[1] THE LANCET, Oct. 26th, 1912, p. 1169.

[2] Journal of the Royal Statistical Society, December, 1912, pp. 1-27, and pp. 46 et seq.

*The Question of Definition.*

Reverting to the question of definition—the only part of the report that has provoked criticism—Dr. Dudfield said that when attempt is made to express in scientific language the condition popularly known as "stillbirth"—i.e., the birth of a dead child—a difficulty is encountered as to the connotation of the several words "child," "birth," "dead," each of which requires some form of definition or descriptive paraphrase. With reference to the exact meaning of the word "child," he inquires whether it is to be understood as applying to every product of pregnancy without regard to duration, or whether it should be limited to a fœtus which has attained a development that will enable it to maintain an existence apart from the maternal structures. Questions of this kind obviously involve important points of law as well as of medicine. Accordingly, Dr. Dudfield quotes legal authority[3] for the statement that "life" begins as soon as an infant is able to stir in the mother's womb. The first movement or "quickening" takes place in the fourth month of gestation, but the fixing a date for the beginning of "life" does not prevent unauthorised induction of abortion at an earlier date from ranking as criminal. On the other hand, the physician relies mainly on auscultation of the fœtal heart sounds for evidence of life in utero. For reasons specified in the text Dr. Dudfield holds it preferable to date fœtal life from the time when the heart sounds become audible. The middle of the seventh month of pregnancy is the period when a child is generally regarded as "viable," and it is important to note that the Notification of Births Act does not require intimation of the birth of a dead child occurring before the twenty-eighth week of pregnancy.

In common parlance a child is held to be "dead" when it shows no signs of life. But the question of what physical or other functions are to be taken as signs of life remains undetermined. According to present legal practice a child is deemed to have "lived" when it has been proved to have breathed or cried after birth. On the other hand, medical experience shows that sometimes a liveborn child dies without making any respiratory effort. We agree with Dr. Dudfield in thinking that some test other than respiration should be adopted to distinguish live- from still-born children.

*Suggested Definitions of "Stillbirth."*

For the foregoing and other specified reasons the following conclusions are arrived at: (1) That the term stillbirth should be limited to the product of gestation which has lasted for not less than 28 weeks; (2) that a birth is "complete" at the moment when the whole of the body of the child—"body" including trunk, head, and limbs—is outside the body of the mother; and (3) that the crucial test of "life" should be the continuance of the action of the child's heart.

With the object of arriving at a definition which should be precise and simple, and at the same time suitable for international use, Dr. Dudfield applied to the council of the Obstetrical Section of the Royal Society of Medicine for an authoritative definition of the term "stillbirth." In response, he received from the honorary secretary of the section the following amended definition, which has been approved by the council of the section:—

> A stillborn child means a child which measures more than 13 inches in length from the top of the head to the heel, and which, when completely extruded from the body of the mother (head, body, and limbs, but not necessarily the afterbirth), exhibits no sign of life by crying or breathing, or by pulsation in the cord at its attachment to the body of the child, or by beating of the heart. N.B.—The final test of life is the pulsation of the heart, but this can only be ascertained by an expert.

Respecting this definition Dr. Dudfield observes that it is in close agreement with one which he had himself suggested, the only difference being the inclusion of the signs "crying" and "breathing" which he had described as secondary. The note to the definition relegates such signs of life to their proper position, and practically reduces the proposed definition to the terms originally suggested, except for the substitution of the length of the child's body as the test of the duration of pregnancy—a substitution which he personally approves.

With reference to the registration of stillbirths Dr. Dudfield remarks that the replies received from abroad to the question whether these are registered as births, as deaths, or as both, reveal a marvellous variety of practice. For the study of ante-natal causes producing stillbirths it is

[3] Blackstone, 9th edition, I. p. 129.

necessary that the latter should be regarded as deaths, and a medical certificate of cause of death should be invariably insisted on. Once the cause is known, it should not be beyond human ingenuity to suggest the remedies. In this way Dr. Dudfield believes it possible to reduce infantile mortality to limits considerably below what can be reached by present methods. By such means he thinks that the present shortage of new lives resulting from the lower birth-rate will be amply compensated.

*Discussion of Proposed Definitions.*

Most of an enteresting discussion has hovered round the definitions already suggested. Dr. Major Greenwood, recognising the difficulty of arriving at an exact definition of "stillbirth," hesitated to characterise the heart beat as the basal sign of life; indeed, he doubted whether any one basal sign of life existed. Taking the matter as a practical one, he suggested the question whether if the beating of the heart were considered the ultimate criterion, an appreciable number of children would be saved who, by the breathing and crying test, would be regarded as born dead. He thought that a much wider statement, not of the nature of a definition, was, on the whole, safer and calculated to avoid the introduction of a provision which might not be effective in the case of untrained persons.

Dr. Amand Routh, commenting on the general meaning of the term "stillbirth," thought that it should include abortions as well as children born after the viable age of 28 weeks. From the view-point of preventing deaths in both periods of intra-uterine life, he thought it desirable to secure notification not only after, but also, if possible, before the age of viability. In addition to being compulsorily registered, they should also be included among the livebirths and the deaths. He expressed the opinion that most of the children who died in utero before the commencement of labour perished during the last few days of gestation, and that if the causes of such deaths could be determined many lives might be saved by inducing labour before the time of the probable fœtal death.

Dr. Walter Griffith communicated to the meeting some of the reasons why the council of the Obstetrical Section recommended the definition before them. They held that what was needed was a definition as accurate as possible, but sufficiently simple, so that it could be applied by anyone present at the birth, and by registrars and lawyers as well as by medical men. Such definition must be a compromise between utility and scientific accuracy. The length of the child was taken as the indication of its sufficient development, because anyone with a tape measure could measure the baby with accuracy. The alternative in common use was to speak of so many months or weeks of development, but it was not always possible to ascertain accurately the duration of gestation. With regard to the definition as a whole, he preferred that recommended by the Obstetrical Section to the amended one of Dr. Dudfield.

Dr. Butler, addressing himself to the question of evidence of livebirth, concurred in the view that a sign easily observable should be taken as crucial, and thought it convenient to take obvious signs like respiration, because this was a new function established at the birth, whilst circulation went on previous to birth and merely continued afterwards. It was because an arbitrary standard was necessary, and because the establishment of breathing was readily ascertainable, that it was desirable to continue the existing practice of assuming independent life only after the establishment of that function.

The discussion summarised above was a valuable contribution to the important subject dealt with in the report.

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SIR SQUIRE BANCROFT'S READINGS.—Sir Squire Bancroft, whose readings in aid of hospitals were interrupted by ill-health last winter, now proposes to bring them to a close and to give a farewell "reading" of Dickens's "Christmas Carol," to complete as his gift to hospitals by this means the sum of £20,000. Sir Squire Bancroft's first public reading was in aid of the Middlesex Hospital, and he will give the final one in London for the same great charity in which he has long been interested, having served on the weekly board for 25 years. The reading will take place on the afternoon of Tuesday, March 11th, at the St. James's Theatre, which has kindly been lent for the purpose by Sir George Alexander.

# Public Health.

## REPORTS OF SCHOOL MEDICAL OFFICERS.

*Hampshire County Council.*—Dr. R. A. Lyster's well-considered and well-presented report deals with a school population of 52,700 and a total of 47,985 examinations and re-examinations. In the three years 1909–1911 there have been at least 80,000 examinations apart from those required by the code, and a very large proportion of all the children in the schools have now been inspected. Dr. Lyster emphasises the point that in relation to statistics the "really important figures are those relating to amelioration." Such a mass of statistics has now been accumulated as to make it desirable to minimise this side of the work as much as possible with a view to the larg[illegible] expenditure of energy in more practical and hygienically profitable ways. The schools in Hampshire are divided into the two groups of urban and rural. The urban children show a preponderance of defects. Since the last year's report was issued with remarks concerning the superiority of clogs over ordinary boots, clogs have been adopted in many parts of the county. The progress of the work generally is shown to be very satisfactory, opposition from parents may be said to have practically disappeared, many of the boards of guardians have requested reports upon boarded-out children, and in some instances a member of the board attends at the time of inspection *in loco parentis*. Dr. Lyster urges that breathing lessons should be carried out every morning and afternoon, and that open-air teaching should be much extended. Some interesting pages deal with amelioration, and the position of boards of guardians in relation to treatment of school children is considered at length. The report closes with a paragraph suggesting the advisability of the withdrawal of the system of payment of grants for attendance made by the Board of Education.

*Bradford City Council.*—It is pleasant to notice that a large part of the report of Dr. Lewis Williams is taken up with the consideration of ameliorative measures. The reports of the school clinic, of the school dentist, and of the open-air school take up a large share of space, while another substantial section treats of methods of dealing with tuberculosis among school children, and recommends a school sanatorium for 50 children with accommodation for the teaching of another 100 non-resident selected cases. The provision of an open-air day school for 180 pre-tuberculous and early tuberculous children is also advocated. The report includes a section devoted to the results of the inspection of secondary schools. Here the most notable fact which has been brought to light is the startling number of girls who suffer from spinal curvature, over 14 per cent. of the scholars in attendance being affected. A large majority of the cases are found curable by means of suitable remedial exercises. The school clinic has dealt with 7719 children needing treatment: 5064 received treatment and 1710 were referred elsewhere, while 945 were examined on account of scarlet fever or diphtheria before their return to school. The attendance was 1000 in excess of that for 1910. The total number of attendances made by children at the clinic for treatment and for examination was 20,325.

*Salop County Council.*—Dr. James Wheatley's report for 1911 lays stress on the preventive side of school inspection work, and expresses the view that the greatest result will be the decrease of dental caries. The report also emphasises the extreme importance of physical exercises in improving the health of children. The number of schools dealt with is 279, comprising 340 departments. The children on the register numbered 32,491 in February and 33,086 in November, and during the year 7117 children were completely examined, of whom 1340 (18·8 per cent.) required medical attention. A greater percentage of defects was found in town as compared with country schools. There was also noted an excess of measles in town schools, but not of whooping-cough. The percentage of all children suffering from measles before the end of school life was 77·1 males and 79·8 females, 10 per cent. have scarlet fever, and 3 per cent. diphtheria. Both the latter are more prevalent in town than in country schools. The excess of defects is particularly well marked in eye cases; in town schools the percentage is 15·7 of children examined and in country

schools 10·5. The difference is ascribed to the conditions of town life, and among these the earlier age at which town children begin school, the lesser opportunity for outdoor life, and the greater opportunity for reading. It is suggested that one of the causal factors in the development of adenoids is almost constant exposure to infection in schools. A useful leaflet for distribution has been drawn up dealing with mouth-breathing, adenoids, and breathing exercises; this is reproduced. An inquiry was made to determine the influence of mouth-breathing on the production of dental caries; no marked correlation is observed. Much valuable matter on other possible causes of dental caries is included, and a leaflet with directions for the avoidance of caries is reproduced. Apart from a subscription of £76, and the provision of letters of recommendation for the Eye, Ear, and Throat Hospital for Shropshire and Wales, the education authority does not help financially in the treatment of school children. Only 41·9 per cent. of the children inspected in 1911 had treatment, but this is against 12·2 per cent. in 1910.

*Cheshire County Council.*—The county of Cheshire is divided for medical inspection purposes into East, West, and Mid-Cheshire. In these divisions 18,968, 20,769, and 20,057 children are in average attendance. In recording the percentage of dental defects, one of the three inspectors notes only 18 children out of 6970 as requiring treatment. The explanation is that the medical inspector concerned only issues notices to parents if the caries is accompanied by oral sepsis or sequelæ thereof. And speaking of the causes of caries, Dr. Meredith Young considers it "a matter for regret that the quill toothpick has been banned by society." In Mid-Cheshire only 1 in every 760 children showed any signs of having had conservative dental treatment. The report contains the result of a valuable investigation into the cases of 84 mentally defective children by Dr. A. M. Pryce, classified and analysed under 28 headings; also the tabulated family history of 28 cases by the school medical officer. The medical inspector for West Cheshire (Dr. G. A. Jubb) records the results of the examination of 78 dull, 25 backward, and 10 mentally defective children, and gives in diagram form two illustrative pedigrees. Four school nurses are employed, and the part-time services of 71 district nurses are also made use of; and the arrangements for "following up" cases have resulted in securing the treatment of 80·88 per cent. A coloured diagram gives these facts in graphic form, and another summarises the reasons for the non-treatment of the cases left over. Of these, poverty alone accounts for a large proportion. The report throughout is illuminated by free use of helpful diagrams, thus making the masses of statistics readily available. In the section dealing with infectious diseases there is an account of an epidemic of jaundice. Twenty-six cases occurred, and particulars are also given of another epidemic in which the majority of the cases were attended by Mr. G. A. Paulin, of Malpas, who gives an account of the symptoms. The illness begins like an ordinary catarrhal jaundice, but the whole family is usually affected. The initial symptoms are seldom severe, not always vomiting, usually constipation; pigmentation all over body, not deep; urine bile-stained. Patients are never very ill unless jaundice is suppressed. The illness takes about two to three weeks to disappear.

*Notts County Council.*—Dr. Henry Handford's report deals with a school population of 48,104, the inspection being carried out by the medical officer, two inspectors, and five nurses. 11,035 children were fully examined, and of 786 children needing immediate treatment only 325, or 41·3 per cent., succeeded in obtaining it. The report pins its faith to school clinics. Dr. Handford urges the necessity for the teaching of cleanliness "by example" by making the schools "models of cleanliness and sanitation." And an important suggestion is that the function of school nurse should be combined with that of health visitor, visitor under the Notification of Births Act, and health visitor in cases of tuberculosis. "Each nurse would then have a small district with less travelling, would know the people, and would get that variety of work which is necessary for mental alertness." Dealing with 18 cases of spinal curvature it is noted that spinal disease is very rare among elementary school children. This is a complete contrast to the experience in the Bradford secondary schools to which allusion has just been made.

# VITAL STATISTICS.

## HEALTH OF ENGLISH TOWNS.

IN the 96 English and Welsh towns with populations exceeding 50,000 persons at the last Census, and whose aggregate population at the middle of this year is estimated at 17,852,764 persons, 8632 births and 5906 deaths were registered during the week ended Saturday, Feb. 1st. The annual rate of mortality in these towns, which had been 15·4, 16·5, and 17·0 per 1000 in the three preceding weeks, further rose to 17·2 per 1000 in the week under notice. During the first five weeks of the current quarter the mean annual death-rate in these towns averaged 16·4, or 0·5 per 1000 below the average rate recorded in London during the same period. The death-rates last week in the several towns ranged from 4·9 in Devonport, 7·2 in Ilford and in Southampton, 10·0 in Ealing, 10·3 in Southport, and 10·5 in Wallasey, to 25·0 in Darlington, 25·6 in Barnsley, 25·9 in Wakefield and in Rotherham, 26·8 in Aberdare, and 31·5 in St. Helens.

The 5906 deaths from all causes in the 96 towns were 87 in excess of the number in the previous week, and included 430 which were referred to the principal epidemic diseases, against 526 and 505 in the two preceding weeks. Of these 430 deaths, 205 resulted from measles, 66 from whooping-cough, 65 from infantile diarrhœal diseases, 62 from diphtheria, 17 from scarlet fever, and 15 from enteric fever, but not one from small-pox. The mean annual death-rate from these diseases last week was equal to 1·3, against 1·5 per 1000 in each of the four preceding weeks. The deaths attributed to measles, which had been 268, 277, and 275 in the three preceding weeks, declined to 205 last week, and caused the highest annual death-rates of 2·9 in Bootle, 3·2 in Barrow-in-Furness, 3·4 in Acton, 6·8 in St. Helens, and 6·9 in Wigan. The deaths referred to whooping-cough, which had increased from 55 to 81 in the three preceding weeks, fell to 66 last week, and included 20 in London, 10 in Liverpool, 3 in Nottingham, and 3 in Manchester. The fatal cases of diarrhœa and enteritis (among children under 2 years of age), which had been 72, 87, and 67 in the three preceding weeks, were 65 last week; 18 deaths were registered in London, 8 in Manchester, 5 in Birmingham, 3 in Stoke-on-Trent, and 3 in Nottingham. The deaths attributed to diphtheria, which had fallen from 64 to 47 in the three preceding weeks, rose to 62 last week; 6 deaths occurred in London, 5 in Walthamstow, 5 in Bradford, 4 each in Portsmouth, in Birmingham, and in Manchester, and 3 each in Liverpool, in Sunderland, in Newcastle-on-Tyne, and in Rhondda. The deaths referred to scarlet fever, which had been 32, 25, and 19 in the three preceding weeks, further declined to 17 last week, and included 4 in Birmingham, 2 in London, and 2 in Aberdare. Of the 15 fatal cases of enteric fever, which were equal to the average in the four preceding weeks, 4 were registered in London.

The number of scarlet fever patients under treatment in the Metropolitan Asylums and in the London Fever Hospitals, which had steadily declined from 2112 to 1784 in the five preceding weeks, had further fallen to 1738 on Saturday last; 209 new cases were admitted to these institutions during the week, against 202, 204, and 215 in the three preceding weeks. These hospitals also contained on Saturday last 931 cases of diphtheria, 789 of measles, 292 of whooping-cough, and 40 of enteric fever, but not one of small-pox. The 1610 deaths from all causes in London were 67 in excess of the number in the previous week, and were equal to an annual death-rate of 18·6 per 1000. The deaths referred to diseases of the respiratory system, which had steadily increased from 285 to 393 in the six preceding weeks, further rose to 447 last week, and were 53 above the number registered in the corresponding week of last year.

Of the 5906 deaths from all causes in the 96 towns last week, 160 resulted from various forms of violence and 413 were the subject of coroners' inquests. The causes of 51, or 0·9 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest. All the causes of death were duly certified last week in London and in its 14 suburban districts, in Sheffield, Leeds, Bristol, Bradford, Hull, Nottingham, and in 55 other smaller towns. The 51 uncertified causes of death last

week included 11 in Birmingham, 11 in Liverpool, 3 in Stoke-on-Trent, 3 in St. Helens, and 2 each in Burnley, Blackburn, Barrow-in-Furness, Halifax, Rotherham, Middlesbrough, and Rhondda.

### HEALTH OF SCOTCH TOWNS.

In the 16 largest Scotch towns, with an aggregate population estimated at 2,259,400 persons at the middle of this year, 1199 births and 874 deaths were registered during the week ended Saturday, Feb. 1st. The annual rate of mortality in these towns, which had been 17·3, 18·5, and 20·2 per 1000 in the three preceding weeks, was again 20·2 per 1000 in the week under notice. During the first five weeks of the current quarter the mean annual death-rate in these Scotch towns averaged 18·8, against a corresponding rate of 16·4 per 1000 in the 96 large English towns. Among the several Scotch towns last week the death-rates ranged from 9·0 in Kilmarnock, 14·6 in Falkirk, and 14·8 in Greenock, to 26·5 in Coatbridge, 31·2 in Perth, and 31·7 in Clydebank.

The 874 deaths from all causes were one fewer than the number in the previous week, and included 74 which were referred to the principal epidemic diseases, against numbers increasing from 57 to 80 in the three preceding weeks. Of these 74 deaths, 55 resulted from whooping-cough, 6 from diphtheria, 5 from infantile diarrhœal diseases, 3 from measles, 3 from enteric fever, and 2 from scarlet fever, but not one from small-pox. These 74 deaths from the principal epidemic diseases were equal to an annual death-rate of 1·7, against 1·3 per 1000 in the 96 large English towns. The deaths attributed to whooping-cough, which had steadily increased from 29 to 40 in the four preceding weeks, further rose to 55 last week, and included 38 in Glasgow, 3 each in Edinburgh, Leith, Coatbridge, and Motherwell, and 2 in Paisley. The deaths referred to diphtheria, which had been 10, 10, and 13 in the three preceding weeks, declined to 6 last week, of which number 3 occurred in Glasgow. The fatal cases of diarrhœa and enteritis (among infants under two years of age), which had increased from 7 to 20 in the three preceding weeks, fell to 5 last week, and comprised 2 in Glasgow, 2 in Paisley, and 1 in Perth. The 3 deaths attributed to measles, which were registered in Dundee, Motherwell, and Falkirk respectively, were equal to the average in the four preceding weeks. The 3 deaths referred to enteric fever were recorded in Glasgow, Aberdeen, and Perth respectively, and the 2 fatal cases of scarlet fever, which were 4 below the average in the three preceding weeks, in Glasgow and Aberdeen respectively.

The deaths referred to diseases of the respiratory system in the 16 Scotch towns, which had steadily risen from 148 to 188 in the three preceding weeks, further rose to 221 last week; 31 deaths were attributed to different forms of violence, against 24 and 27 in the two preceding weeks.

### HEALTH OF IRISH TOWNS.

In the 27 town districts of Ireland with an aggregate population estimated at 1,199,180 persons at the middle of this year, 614 births and 470 deaths were registered during the week ended Saturday, Feb. 1st. The annual rate of mortality in these towns, which had been 21·0, 22·2, and 21·3 per 1000 in the three preceding weeks, declined to 20·4 per 1000 in the week under notice. During the first five weeks of the current quarter the mean annual death-rate in these Irish towns averaged 21·4 per 1000; in the 96 large English towns the corresponding death-rate did not exceed 16·4, while in the 16 Scotch towns it was equal to 18·8 per 1000. The annual death-rate recorded in the several towns last week was equal to 18·8 in Dublin (against 18·6 in London and 22·7 in Glasgow), 22·9 in Belfast, 32·6 in Cork, 19·1 in Londonderry, 17·6 in Limerick, and 7·6 in Waterford, while in the remaining 21 smaller towns the mean rate did not exceed 17·1 per 1000.

The 470 deaths from all causes in the 27 Irish towns were 20 fewer than the number in the previous week, and included 30 which were referred to the principal epidemic diseases, against numbers decreasing from 53 to 39 in the three preceding weeks. Of these 30 deaths, 21 resulted from measles, 5 from diarrhœal diseases, 2 from diphtheria, 1 from scarlet fever, and 1 from whooping-cough, but not one from enteric fever or from small-pox. These 30 deaths from the principal epidemic diseases were equal to an annual death-rate of 1·3 per 1000, which coincided with the death-rate from these diseases in the 96 English towns, against 1·7 in the 16 Scotch towns. The deaths attributed to measles, which had been 22, 22, and 17 in the three preceding weeks, rose to 21 last week, and comprised 19 in Belfast, 1 in Dublin, and 1 in Ballymena. The deaths of infants under 2 years of age referred to diarrhœa and enteritis, which had been 12, 12, and 7 in the three preceding weeks, further declined to 5 last week, and were all registered in Dublin. The 2 fatal cases of diphtheria and that of scarlet fever were recorded in Belfast, and that of whooping-cough in Dublin.

The deaths referred to diseases of the respiratory system, which had steadily risen from 85 to 135 in the five preceding weeks, declined to 120 in the week under notice. Of the 470 deaths from all causes, 144, or 31 per cent., occurred in public institutions, and 5 resulted from different forms of violence. The causes of 22, or 4·7 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest; in the 96 large English towns the proportion of uncertified causes of death last week did not exceed 0·9 per cent.

## THE SERVICES.

### ROYAL NAVY MEDICAL SERVICE.

Staff-Surgeon David Walker Hewitt has been promoted to the rank of Fleet-Surgeon in His Majesty's Fleet for conspicuous professional merit (dated Jan. 28th, 1913).

The following appointments have been notified:—Fleet-Surgeons: A. X. Lavertine to the *Good Hope*, and for group of ships of Third Fleet; and J. E. Coad to the *Donegal*, on transfer of flag, and to the *Suffolk*. Staff-Surgeons: W. P. Walker to the *Carnarvon*, additional, for Second and Third Fleets; W. H. O. Garde to the *Gibraltar*; E. C. Sawdy to the *Edgar*; and F. F. Mahon to the *Theseus*, all on recommissioning. Surgeons: E. Moxon-Browne to the *Good Hope*, and for group of ships of Third Fleet; and H. M. Langdale to the *Victory*, additional, for disposal.

### ARMY MEDICAL SERVICE.

Colonel Richard W. Ford, D.S.O., is placed on the half-pay list from Jan. 26th, 1913, and not as stated in the *Gazette* of Jan. 28th, 1913.

Colonel Robert J. S. Simpson, C.M.G., retires on retired pay (dated Feb. 5th, 1913).

Lieutenant-Colonel Robert J. Geddes, D.S.O., from the Royal Army Medical Corps, to be Colonel, vice R. J. S. Simpson, C.M.G. (dated Feb. 5th, 1913).

### ROYAL ARMY MEDICAL CORPS.

Major Daniel D. Shanahan to be Lieutenant-Colonel, vice R. J. Geddes, D.S.O. (dated Feb. 5th, 1913).

Major Henry A. Berryman retires on retired pay (dated Feb. 5th, 1913).

Captain Richard C. Wilson to be Major (dated Feb. 3rd, 1913).

The undermentioned Lieutenants, from the Seconded List, are restored to the establishment:—Walter W. Pratt and Edward P. A. Smith (dated Jan. 26th, 1913); Cuthbert J. H. Little, Frank C. Cowtan, Arthur A. M. Davies, and Leslie Dunbar (dated Feb. 1st, 1913).

Colonel R. Kirkpatrick, C.M.G., Assistant Director of Medical Services at Bloemfontein, on transfer from the South African Command to the Indian Establishment, has been selected for appointment as Assistant Director of Medical Services to the Abbottabad and Sialkot Brigades.

Lieutenant-Colonel E. A. Burnside has taken up duty at Bangalore Cantonment, in charge of the Military Hospital. Lieutenant-Colonel H. N. Thompson, in charge of the Military Hospital at Lucknow Cantonment, has been selected for appointment as Senior Medical Officer on board the transport s.s. *Dongola*, leaving Karachi for Southampton on Feb. 26th with time-expired troops. Lieutenant-Colonel J. W. Bullen, in charge of the Military Hospital at Agra Cantonment, has been granted leave of absence home from India from date of disembarkation at Southampton. Lieutenant-Colonel R. J. Geddes, D.S.O., has been granted one year's extension of his appointment in charge of the Military Hospital at Jubbulpore. Lieutenant-Colonel E.

Eckersley, late Deputy Assistant Director-General of the Medical Division at the War Office, has been placed under orders for service in India, and on arrival will be appointed to hold charge of the Military Hospital at Delhi. Lieutenant-Colonel T. B. Winter, commanding No. 9 Company of the Royal Army Medical Corps, has rejoined the Military Hospital at Colchester on the expiration of his leave of absence. Lieutenant-Colonel R. W. Wright has taken over charge of the Military Hospital at Fyzabad.

Major C. W. H. Whitestone has been selected for appointment as Deputy Assistant Director of Medical Services, Mobilisation Branch, to the Third (Lahore) Division of the Northern Army in India, in succession to Major Jay Gould, transferred to special duty under the orders of the Director-General of the Indian Medical Service. Major J. D. G. Macpherson, at present in charge of the Military Hospital at Pachmarhi cantonment, has been selected for appointment as Senior Medical Officer at Kamptee. Major B. W. Longhurst has been transferred from Ashton to Fleetwood, and placed in charge of the Military Hospital. Major H. A. Bray, lately holding charge of the Military Auxiliary Hospital at Woolwich, has joined the Egyptian army. Major St. J. B. Killery, on arrival in India for a tour of service, has been appointed to the Military Hospital at Bangalore. Major W. J. Taylor has joined the Military Hospital at Colchester for duty on relief at Bedford by Lieutenant-Colonel G. F. Poynder. Major E. A. Bourke, embarkation medical officer at Cape Town, has arrived home on duty in medical charge of the 12th (Prince of Wales Own) Lancers, *en route* to Norwich. Major R. J. Blackham has been placed on special duty until further orders as an addition to the medical staff in attendance upon H.E. the Viceroy and Governor-General of the East Indies. Major A. H. Safford has been transferred from the Fyzabad Brigade to Lucknow Cantonment and attached to Headquarters of the Eighth (Lucknow) Division. Major G. B. Stanistreet, company officer No. 35 Company, Royal Army Medical Corps, stationed at Millbank, S.W., has been selected for appointment as Deputy Assistant Director-General of the Medical Division at the War Office, in succession to Lieutenant-Colonel E. Eckersley, whose tenure of the appointment has expired. Major H. B. G. Walton has taken up duty at Bareilly as Staff-Surgeon. Major C. T. Samman has been selected for appointment as Specialist in Mental Science. Major J. T. Johnston has been placed under orders for transfer from Chakrata Cantonment to Meerut Cantonment for duty at the Military Hospital.

Captain H. W. Carson, staff-surgeon at Cherat, First (Peshawar) Division, has been granted six months' general leave of absence home from India. Captain G. H. Stevenson has arrived home for duty from the Military Hospital at Ambala. Captain C. P. O'Brien Butler has arrived home on leave of absence from Purandpur. Captain C. R. M. Morris has been appointed for duty to the Eastern Command. Captain D. P. Johnstone has embarked for a tour of service in India. Captain R. M. Ranking has been appointed to the Third (Lahore) Division of the Northern Army in India. Captain P. S. Tomlinson has been placed under orders for transfer from Meerut Cantonment to the Military Hospital at Roorkee. Captain E. J. Elliot has joined the Military Hospital at Ashton for duty on transfer from Chester. Captain V. G. Johnston, on return home from duty at the Military Hospital, Nowshera, has been appointed to the Eastern Command. Captain A. T. Frost has joined the Dublin District on completion of duty at Galway. Captain G. De la Cour has been reverted to the home establishment at the expiration of his leave of absence from India. Captain J. R. Lloyd has arrived home on leave of absence from Jubbulpore. Captain E. W. M. Paine has been appointed for duty to the Western Command. Captain H. E. J. A. Howley, in charge of the Military Hospital at Dinapore, has been granted eight months' general leave of absence home from India. Captain R. J. Franklin has been appointed to the Third (Lahore) Division of the Northern Army in India. Captain W. Egan, on arrival home from the Military Hospital at Mandalay, has been appointed to the Dublin District. Captain J. E. Ellcome has been transferred from Kamptee Cantonment to the Military Hospital at Nowgong. Captain A. W. Byrne has taken up duty at Jullundur on transfer from Lahore.

Lieutenant F. S. Tamplin has joined the Royal Victoria Hospital at Netley for duty. Lieutenant J. S. Levack has embarked for a tour of service in India. Lieutenant H. J. G. Wells has been transferred from the Military Hospital at Queenstown to Kinsale. Lieutenant B. Biggar has joined the London District on transfer from Pirbright. Lieutenant L. C. Hayes has embarked for a tour of service in Bermuda. Lieutenant H. S. Blackmore has been transferred from Caterham to London.

## INDIAN MEDICAL SERVICE.

The King has approved of the retirement of Lieutenant-Colonel James John Pratt (dated Dec. 27th, 1912).

Colonel A. O. Evans, Officiating Deputy Director of Medical Services to the Second (Rawal Pindi) Division of the Northern Army in India, has taken up duty as Officiating Inspector-General of Civil Hospitals in Burma during the absence on leave of Colonel H. St. Clair Carruthers.

Lieutenant-Colonel A. W. Dawson has been appointed to hold Civil Medical Charge of Roorkee Cantonment in addition to his military duties on return from leave, relieving Major W. G. Beyts, Royal Army Medical Corps. Lieutenant-Colonel J. T. Daly has been selected for appointment as Officiating Assistant Director of Medical Services to the Kohat Brigade of the Eighth (Lucknow) Division. Lieutenant-Colonel W. H. B. Robinson has arrived home on leave of absence from India. Lieutenant-Colonel J. Morwood has taken up duty as Civil Surgeon at Shahjahanpur on return from privilege leave of absence.

Major W. Lapsley has been appointed Civil Surgeon at Azamgarh on return to duty from leave of absence. Major A. Hooton has been selected by H.E. the Governor of Bombay Presidency for appointment to the Bombay Medical Council. Major E. O. Thurston, civil surgeon at Burdwan, Bengal Presidency, has been granted one month's privilege leave of absence. Major T. Jackson has been selected for appointment as Officiating Deputy Sanitary Commissioner of the Gujarat Registration District, in addition to his own duties, in succession to Major C. C. Murison, appointed to officiate as Civil Surgeon at Karachi. Major E. R. Rost has arrived home on leave of absence from India. Major J. B. D. Hunter has been granted 18 months' leave of absence combined with furlough by the Foreign Department of the Government of India. Major R. F. Baird, in medical charge of the Gonda District, has been placed on special deputation duty at the Central Research Institute of India at Kasauli.

Captain L. Hirsch has been granted nine and a half months' leave of absence combined with furlough home from India. Captain W. L. Forsyth has been selected for appointment to the Jail Department in the Madras Presidency. The services of Captain A. W. C. Young have been placed by the Home Department of the Government of India at the disposal of the Chief Commissioner of Delhi for employment as Health Officer of Delhi. Captain W. T. Finlayson, officiating superintendent of the Borstal Central Jail, Lahore, has been confirmed in that appointment in succession to Major C. H. Bensley, transferred for permanent duty under the Jail Department of the Central Provinces. Captain R. B. S. Sewell, officiating professor of biology at the Medical College, Calcutta, has been granted privilege leave of absence. H.E. the Commander-in-Chief in India has been pleased to appoint Captain F. F. S. Smith to be Specialist in Ophthalmology to the Eighth (Lucknow) Division of the Southern Army in India. Captain C. E. Southon has taken up duty as Plague Medical Officer at Gurdaspur. Captain G. Holroyd, officiating superintendent of the Bhagalpur Central Jail, has been granted one month's privilege leave of absence. Captain H. S. Hutchison has taken up duty as Personal Assistant to the Surgeon-General with the Government of Bombay in succession to Major A. W. Tuke, who was officiating. Captain H. W. Illius, officiating civil surgeon at Rae Bareli, has been transferred in the same capacity to Budaun.

Lieutenant G. Tate has taken up duty as Specialist in Midwifery and Diseases of Women and Children to the Fifth (Mhow) Division.

## TERRITORIAL FORCE.

### *Royal Army Medical Corps.*

3rd Scottish General Hospital, Royal Army Medical Corps: Quartermaster and Honorary Major William Lee, from the 2nd Lowland Field Ambulance, Royal Army Medical Corps, to be Quartermaster, with the honorary rank of Major (dated Jan. 9th, 1913).

*Attached to Units other than Medical Units.*—Lieutenant Percy T. Tolputt to be Captain (dated Dec. 18th, 1912).

The undermentioned officers resign their commissions:—Captain Daniel O. Kerr and Lieutenant Alfred I. Shepheard-Walwyn (dated Feb. 5th, 1913).

### PLAGUE PREVENTION IN KIAOCHAU.

In the *Archiv für Schiffs- und Tropen-Hygiene* for December, 1912, Dr. Uthemann, Surgeon-General of the German Navy, in medical charge at Kiaochau during the plague period in 1911, publishes an account, written in May, 1911, of the preventive measures taken at that time. Like all regulations, they were effective chiefly because they were very accurately carried out by a zealous and attentive staff; but Dr. Uthemann is of opinion that their usefulness is vouched for by the fact that no case of plague did occur in the capital Tsingtau, and he does not think the regulations could be materially improved. As any invasion by plague would have seriously damaged the trade of Tsingtau it was decided to keep the disease at all costs at a distance, rather than to arrange to deal effectively with cases as they arose. Accordingly, the whole frontier of the protectorate was policed, and the boundaries of the city protected by a barbed wire fence with a geard of apparently 300 men; the coast was patrolled by guard boats, and lighted at night by searchlight. In the wire fence were two openings, one only for admission, and near it a market where the buyers and sellers were separated by two wire fences 5 feet apart. As for the railway, a quarantine station was established at Syfang, where all passengers left the train and were examined and then kept under observation five days (many cases were found of typhus, typhoid, small-pox, and relapsing fevers). Responsible people who could be trusted were allowed to proceed and report themselves daily for five days to the police. If quarantined they were examined twice daily, and if without means were fed as well as housed. Quarantine of seven days was imposed on ships; that was, it is thought, a little long. The disease was so infectious, and in Manchuria destroyed so many doctors, attendants, and gravediggers, that it was necessary to protect the eyes with motor goggles, the mouth and nose with a cotton-wool anask, and to wear a hooded suit like that of the Mizericordia in Florence, with gauntlets and long boots. When leaving the ward the physician or attendant was sprayed with sublimate solution, his suit brushed with that to destroy any adherent germs; then he took the suit off and dropped it into more lotion, and so, having protected himself and others, he could go free.

# Correspondence.

"Audi alteram partem."

## THE DOSE OF VERONAL.

*To the Editor of* THE LANCET.

SIR,—The question has recently been raised as to the amount of veronal which may be taken without fatal results, and the following case may therefore be of interest. Mr. ——, aged 20, was under treatment on account of recurrent attacks of vomiting, associated with a dilated stomach, and he had a very poor appetite. These attacks of vomiting had been present for many years past from time to time, and his appendix had been removed some two months previously. On Jan. 14th, 1908, he had returned home to the country extremely exhausted, and had had a hot bath in the afternoon and afterwards fell asleep. Towards night he complained of intense vertical headache and took tabloids of veronal at frequent intervals with the object of relieving it. He took altogether 56 grains. When seen the next morning by Dr. Crawley and Dr. Woollerton they found that he was suffering from some kind of poisoning, but they were at first uncertain as to its nature. The pupils were widely dilated, but reacted slightly; the knee-jerks and plantar reflexes were present, and he was in a semi-conscious condition. He was very ataxic, and did not recognise people; he was wandering in his talk, and slept the greater part of the day. He was almost pulseless, his heart's action was extremely feeble and intermitted at times, and was rapid. On the 16th he was better, but was still drowsy and semi-conscious. He was very ataxic, and when he attempted to walk he staggered about and had to be supported. During the night he was seized with four epileptiform convulsions, but did not foam at the mouth. He was rigid; there were no tonic contractions. After these attacks he was very much exhausted, but on the 17th he was better, sitting up in bed and talking, and taking an interest in what was going on. He had, however, another slight convulsion in the morning, in which there was twitching, and his respirations were rapid, about 50. He complained of cardiac pain, and was very violent. He then passed into a condition of exhaustion in a semi-drowsy state. He was quite on the *qui vive* at the slightest noise, and wanted to know to what it was due, but he had no recollection of his attacks during the night, and he felt as if he was dying. On examination nothing abnormal could be made out. He was perspiring freely, the pupils were of medium size, and the tongue was clean. On the 18th he had two fits, and is said to have been amblyopic for a short time. There were no further symptoms, and he gradually recovered.

I am, Sir, yours faithfully,

Portland-place, W., Jan. 29th, 1913. G. NEWTON PITT.

## PROGERIA AND ATELEIOSIS.

*To the Editor of* THE LANCET.

SIR,—In his article with the above heading in the last number of THE LANCET, Professor Arthur Keith hopes that the publicity given to these remarkable disorders may result in the recognition of further cases, and that thereby additional light may be thrown upon their nature.

As I have devoted a good deal of attention to these two morbid conditions, I hope I may be permitted to emphasise his request. Indeed, it is difficult to over-estimate the importance of getting all the information about them that can be obtained. No one can read Professor Keith's searching comparison between acromegaly, progeria, and ateleiosis without being convinced of their intimate relationship, and in some measure realising the importance of the careful research which he is giving to them. They are not only interesting for their own sakes, but even more interesting because of the light their study may be expected to throw upon the nature of other disorders. It can scarcely be an exaggeration to say that anyone who gives an adequate explanation of their pathology unlocks the door to a complete understanding of the processes of normal growth and development, as well as of many diseases which are now among the enigmas of medicine. As we read Professor Keith's article, and bear in mind the work that is being done by others in the same field, we seem to be on the verge of discoveries which in course of time will place growth and development as much under our control as is the case with the initiation of offspring or the nutrition of the body. The importance of knowledge of this sort, in these days of the progressive weakening of the influences which make for the physical evolution of civilised man, can hardly be gainsaid. It is fortunate that there should now be a representative skeleton of each of the three disorders in the Museum of the Royal College of Surgeons of England. Evidently Professor Keith inclines to the view that the seat of the morbid state is in each case to be traced to some alteration in quantity or quality of the secretion of the pituitary gland. In this respect his opinion nearly coincides with that which has been formed by Cushing as expressed in his important book, "The Pituitary Body and its Disorders." But striking as is the evidence now being accumulated in favour of the pituitary origin of these maladies, much yet remains to be done before their pathology can be regarded as settled. It is still possible that the disease of the pituitary is either terminal or reciprocal and not primary. To suggest that five such striking, or even hideous, diseases as gigantism, progeria, acromegaly, Froehlich's combination, and ateleiosis are all of pituitary origin is to throw a heavy burden of responsibility upon one very small gland. And though this can hardly be regarded as an argument against the pituitary hypothesis, it must add to the *onus probandi* of those who adopt that view. On the other hand, the theory that the pituitary disorder is incidental, not essential, has at least the merit of priority. Whatever the explanation may be, the difficulties which surround the subject can only be overcome by further knowledge, and it is greatly to be

hoped that Professor Keith's demonstration may result in the discovery of hitherto undetected examples of progeria and ateleiosis.

I am, Sir, yours faithfully,

Reading, Feb. 1st, 1913. HASTINGS GILFORD.

## THE PATHOGENICITY AND VIRULENCE OF BACTERIA.

*To the Editor of* THE LANCET.

SIR,—In a letter appearing in your issue of Feb. 1st Dr. E. C. Hort and Dr. W. J. Penfold drew attention to the importance of their work on temperature variations in animals produced by the injection of substances suspended in water. At the same time they criticised some of our recently published work, and wasted a lot of pity on us and numerous other workers in the same field. We might mention that at the time of our experiments we were fully alive to their work, and anticipating their criticism took full precautions to guard ourselves against error. The main points of their criticism are the use of guinea-pigs and the method of obtaining the water used.

With regard to the former, we found in our preliminary work that guinea-pigs that had become accustomed to the laboratory and which were kept with a constant supply of food maintained a very constant temperature, of course, having the normal diurnal variations. We drew no conclusions from single observations of rises within the ordinary limits. With regard to the other part of the criticism, the experiments on protein and bacterial fever are all in series, and the same amount of vehicle was used in each case as in Friedberger's experiments, and so at any rate the series are comparative, the same (?) error occurring throughout. Dr. Hort and Dr. Penfold's experiments are also capable of another interpretation, which we drew attention to at a meeting of the Pathological Section of the Royal Society of Medicine. Further, we should like to know the amount of calcium obtainable from a Pasteur Chamberland filter, which is made of aluminium silicate, by a water containing practically no carbon dioxide.

We are, Sir, yours faithfully,

F. H. THIELE,

Weymouth street, W., Feb. 1st, 1913. DENNIS EMBLETON.

## ARTIFICIAL RESPIRATION.

*To the Editor of* THE LANCET.

SIR,—If Dr. Leonard Hill will read the verse before the ones he quotes from 2 Kings iv. he will find that Elisha was alone with the child. The account of the miracle must therefore have come from Elisha, for the child could hardly have described what took place. If Elisha had blown into the child's mouth, surely he would have said so. The account does not say that the child began to breathe, but that "the flesh of the child waxed warm." The narrator evidently thought that the child was restored by some transference of vital force, and, as he was also the practitioner, I do not see how we can read anything else into the story. I much doubt if artificial respiration is consistent with the views of physiology held by Elisha, and I do not think he would like the practice to be associated with his name.

I am, Sir, yours faithfully,

Silverton, Devon, Feb. 4th, 1913. O. CLAYTON-JONES.

*To the Editor of* THE LANCET.

SIR,—Dr. Leonard Hill asks in THE LANCET of Feb. 1st, in referring to Elisha raising the Shunammite's son (2 Kings iv. 34), why is not this, the best method of restoring a child, called Elisha's method of artificial respiration? I would suggest in reply that it has not been so called because it has been included amongst the number of the miracles performed by Elijah. Verse 32 states: "And when Elisha was come into the house, behold, the child was dead, and laid upon his bed." This is confirmed by 2 Kings viii. 5, where Gehazi, the servant of Elisha, is relating the miracle to the King, "And it came to pass, as he was telling the king how he had restored a dead body to life," &c. Bible commentators have suggested that Elisha so stretched himself upon the child in order probably to afford a channel for the Divine influence to pass. But to put the consideration of this aside for a moment, it is probable that in any case the "method" should be credited to Elisha's predecessor, Elijah, for in 1 Kings xvii. 21, Elijah, in raising the son of the widow of Zarephath, "stretched himself upon the child three times, and cried unto the Lord, and said, O Lord my God, I pray thee, let this child's soul come into him again."

I am, Sir, yours faithfully,

Feb. 3rd, 1913. SEARCHER.

## THE MEDICAL PROFESSION AND THE NATIONAL INSURANCE ACT.

*To the Editor of* THE LANCET.

SIR,—At the annual general meeting of the National Medical Union, held on Jan. 28th last, it was resolved to convert the Union into a permanent organisation for medical men who decline service under the National Insurance Act as at present constituted. There is no other association at present which is definitely pledged to serve the interests of such men, or which might be of use as a rallying point for those who retire from service in the future.

Amongst the objects at which the Union is aiming are the following: 1. The bringing together of all those whose convictions have led them to remain in opposition to the present Act. 2. Mutual assistance amongst members all over the country. 3. The guarding of the interests of the members in every possible way. 4. To endeavour to uphold the honour and interests of the profession, which have been—and still are—gravely imperilled by recent events. 5. To secure efficient medical attendance for the industrial classes at reasonable remuneration.

It is hoped that all medical men who are in sympathy with the aims and objects of the Union will see their way to becoming members. The annual subscription is 10*s.* 6*d.*

I am, Sir, yours faithfully,

J. WEBSTER WATTS, Secretary.

5, John Dalton-street, Manchester, Feb. 4th, 1913.

*To the Editor of* THE LANCET.

SIR,—As there has been some misunderstanding about the validity or non-validity of medical certificates issued by non-panel doctors to insured persons, I have brought the matter before the Commissioners, who have sent me the following courteous reply:—

National Health Insurance Commission (England),
Buckingham Gate, London, S.W.

SIR,—In reply to your letter of to-day's date, I am directed by the National Health Insurance Commission (England) to state that there is nothing in the National Insurance Act or any Regulations thereunder, or in the rules of any Approved Society, which would justify a society in declining to accept a medical certificate in connexion with a claim for sickness benefit on the ground that the certificate was not signed by a doctor on the local panel.

I am, Sir, your obedient servant,

(Signed) E. HACKFORTH.

The General Secretary, Medical Defence Union.

The profession will, I am sure, be glad to know what is the actual position in this respect.

I am, Sir, yours faithfully,

A. G. BATEMAN, General Secretary.

Medical Defence Union, Trafalgar-square, W.C., Feb. 4th, 1913.

*To the Editor of* THE LANCET.

SIR,—There has been a question of ethics before the profession, and it has by common consent been referred to the British Medical Association, acting formally through their Representatives. The decision is that anyone who after Jan. 18th joined the panel, or before that date, whether acting according to his own judgment, or induced or "coerced" by force of circumstances or other influence, is to be regarded as having acted rightly. There can, I take it, be no other meaning.

1. It was stated in my hearing that a member of a hospital staff who had joined the panel had been requested by his colleagues to give up his hospital appointment. 2. Enclosed are handbills circulated in Kensington. As my name appeared on the panel at the post offices, they refer to me, as well as to others some of whom may still be members of the Association. The intention is evidently to injure, professionally and pecuniarily, those whom the Association has justified. In serious matters relating to professional conduct we were wont to look to the Royal College of Physicians of London. This seems a situation calling for their interference.—I am, Sir, yours faithfully,

GEORGE C. CRICHTON, M.D. Edin.

Longridge-road, S.W., Feb. 4th, 1913.

# SANITATION AT SEA.

(FROM OUR SPECIAL SANITARY COMMISSIONER.)

*(Continued from p. 339.)*

## THE NEW FRENCH LAW AND THE NEW FRENCH SHIPS.

### *The One-class Boats.*

THE new category of passengers that has come into existence is increasing rapidly now that a new class of ships has been built for their accommodation. These are the second-class passengers travelling on ships where there is no first-class. This is a natural development, since wealthy people constitute only a very small minority of the populations concerned. Far more numerous is the great professional and middle class—persons of good education and good social standing, but possessing only moderate means. When they need to cross the Atlantic they feel it humiliating to be railed off and kept in the after part of the ship, even though the second-class accommodation may be good; indeed, in some of the newest and largest Atlantic liners it is better in many ways than the first-class accommodation of a few years ago. In some of the German ships care is taken to make it impossible for the first-class passengers to see their second-class neighbours. Nevertheless, it is but natural to prefer the best part of the ship, and formerly the second-class traveller could enjoy this advantage only if he went by a cattle boat, where provision was made amidships for a few passengers at inexpensive rates. Such a prospect was not satisfactory, however, for the class of travellers that has recently come to the front. They need something similar in character to the first-class saloon passage, but less luxurious, and therefore less expensive. Thus expenditure in coal might be reduced, for they would be content with a slow boat, while the greater the speed, the more violent the shaking and the shocks received from high seas. After all, what does it matter if the journey takes two or three days longer. When there is every necessary comfort a holiday may be enjoyed as well on board as on shore. So long as the cabins are clean and cosy, it is as easy to sleep in a berth of enamelled iron as in one of highly polished and rare wood. Neither are costly silk furnishings and ornately carved and gilded ceilings necessary; good taste is not necessarily costly. On the other hand, travellers of this class are just as anxious about drainage and ventilation as are any saloon passengers. Knowledge of hygiene is a matter not of wealth but of education, and medical men and school teachers are better educated as a class than men who have made fortunes in business. Again, the former class can dispense with an orchestra at meal-times and for concerts. Nor do they require extravagant articles of diet, such as fruit out of season, or game, or caviare. But they do want a skilful *chef* and good food served without stint. And further, they want to drink the ordinary wines, white and red, which to-day are so cheap, and a cup of black coffee to round off their meals with, without extra charge. They need ample space on deck, a comfortable lounge, and a smoking-room or *café*—in fact, every facility for social intercourse and such games as can be enjoyed on board. All this is just what the Compagnie Générale Transatlantique attempted to supply when it constructed the *Chicago* and the *Rochambeau*.

### *The New Crowd.*

As the demand for this sort of accommodation was met, so has it increased. For the moment it is essentially an American and French development. If we exclude those who travel on business, there is more to tempt Americans to Europe than Europeans to America. Further, it is especially the well-educated and well-read American who longs to visit Europe. Prominent among this class are the members of the medical and the teaching professions. Till recently many have been debarred from visiting Europe because they could not afford the first-class or saloon fares, with their incidental expenses, and did not care to occupy an inferior position as a second-class passenger. But in these new boats such passengers occupy the first position in absolutely the best part of the ship. In the fast liners the minimum saloon first-class fare varies from £18 to £25, while in the one-class boats the minimum fare, with privilege of the entire ship, is £11 on the *Chicago*, £12 on the *Rochambeau*, the maximum fare not exceeding £14. The result is that young medical practitioners, who most need the education of travel but whose income as yet is inadequate for the expensive saloon fares, are now coming over freely. The principal difficulty is—and this applies more especially to teachers and professors—that the latter can absent themselves only in the summer; consequently the ships are then apt to be unpleasantly crowded. Thus I found last November that no less than 400 berths had already been retained for the sailings announced to take place next June. The rush to Europe is from the last ship in May to the first ship in July, and the returning crowd sails from August 15th to Oct. 15th. At those periods every berth is occupied, wherefore the general sanitation, and especially the ventilation, of these ships becomes a matter of prime importance. As at least half the passengers who profit by this opportunity are connected with education, the ships sailing at this season are now known as *les bateaux scolaires*, or the school ships.

### *The Good Effects likely to Ensue.*

There is also another cause of travel which may develop considerably. In New York especially the summer weather, the excessive damp heat, is very trying. Many business men who cannot afford to leave their offices, nevertheless endeavour to send their wives and families to the mountains or the seaside during the worst months. But this is extremely costly, and many can ill afford the outlay. On the other hand, in the less frequented parts of Germany, France, or the Ardennes good board and lodging can be obtained for 4*s*. a day, especially if a contract is made for a large party. Moreover, a substantial saving can be realised by the purchase of clothes in Europe instead of in America—I am not talking about shopping in the Rue de la Paix or in Bond-street. Finally, as the Atlantic can now be crossed with all necessary comfort for a reasonable sum, the New York business man of moderate means finds it actually cheaper for his wife and family to spend the summer in Europe than at an American watering-place. The one-class cabin, as this service is sometimes called, is such a success that many more ships of the same sort are likely to be built; and as this cannot be done fast enough, some of the first-class ships—*La Touraine* for example—have been converted into the one-class cabin, that is second-class, style of ship. This evolution will be fraught with many consequences. In Europe we shall have an opportunity of making wider acquaintance with the American people, and the unpleasant impression produced by some of the vulgar rich will, in a measure, be counteracted by the welcome presence of the less wealthy members of the intellectual class. In the same way, as the latter class of visitors is naturally better able to observe, appreciate, and to learn, it will carry back to America those impressions that tend to forward the interests of civilisation at large. All these considerations, while bearing on a multitude of questions, clearly show that there will be in the near future a great augmentation of Atlantic passenger traffic, so that the sanitation of ships acquires increasing importance.

### *Experiments with Thermotanks.*

It was in the spring of 1908 that the *Chicago* made her maiden trip. She is a ship of 11,105 tons and 9500 horse-power, and can accommodate 314 second-class and 1140 third-class, or steerage, passengers. The crew numbers in all 231 men. To provide healthy quarters for 1700 persons in one single structure, even on land, is no easy matter, and at sea the difficulties become intensified. Of more recent construction than the *Provence*, the *Chicago* and the *Rochambeau* are better ventilated. They do not depend only on the extracting power of ventilating fans. The *Chicago* has 15 thermotanks, which are generally employed to pump warmed air into the cabins. The total electric force required to move the fans of these thermotanks is equal to 62 brake-horse-power, and they are supposed to deliver 3,850,000 cubic feet of air per hour. The pressure of steam for heating is equal to 37 lb. per square inch, and the temperature 230° F. Experiments have been made as to the heating powers of these thermotanks. Thermotank No. 1 is credited with delivering 255,000 cubic feet per hour. Its air trunk is 64 feet long and supplies two decks. When the outside temperature was 52 F. the temperature in the forecastle was 104° F., in the emigrants' quarters 96° F., and in the hospital, on the lower deck, 100° F. But with thermotank No. 2 going down three decks, while the air at the start was 114° F., it had fallen to 86° F. at the farthest

point of an air trunk of 70 feet in length. The longest air trunk is 100 feet, and it may be said that from the thermotank the heated air loses about 20 per cent. of its heat before it reaches the farthest end of the air trunk. Therefore those who like heat should get cabins as near as possible to their thermotank. But if these cabins become overheated and the inlet is closed, then there would be more warm air delivered in the cabins that are not so hot because they are farther off. Indeed, the passengers themselves, by watching the temperature of their cabins and controlling the inlets, might very materially help to assure a more even distribution of heat.

*The Impossibility of Automatic Ventilation.*

It was on Dec. 14th last that I sailed homewards on the *Chicago*, and during the journey had many conversations with the chief engineer about all these difficulties. It was mid-winter, just when the Atlantic was troubled by a succession of exceptionally severe storms. Everything that could be closed had to be fastened as tightly as possible to keep out the tempestuous waters. There was very little opportunity for natural ventilation, except for the great air shafts that abut on the upper deck by the funnels and feed the engine-room and stokehole. It is not the storms, however, but the rapid changes of temperature that render the heating and ventilating matters of such great difficulty. The chief engineer said that the ship passed from the Polar current, where the water was at 34° F., to the Gulf stream, where the water was at 73° F., in the space of not more than an hour. Automatic regulators only followed a change of temperature, turning heat off or on. What was necessary was to anticipate such sudden changes of temperature so as to obviate their effects. This, he said, could be met only by a very watchful and intelligent staff. The passenger did not complain until some time after he had been suffering; this could be prevented only by commencing to cool the ship before the hot stream was reached, and to heat it before it penetrated the Polar stream. No system of ventilation would work by itself; it required forethought, watchfulness, and experienced guidance.

*In the Cabins.*

On visiting the different parts of the ship I was much impressed by the forecastle. Here the effect of the recent legislation was distinctly visible. Each sailor had more space for his berth; 123 cubic feet is the legal minimum. Then there must be an inlet and an outlet for the air, together with proper means of warming as well as of ventilating. Here we had a thermo-tank just the same as that supplied to the most luxurious state-rooms. Consequently, the air was sweet and there was an appearance of comfort and brightness which constituted a great improvement on what I have too often seen on old-fashioned ships. The numerous hospitals on board were well supplied with natural and artificial light, and there was plenty of space. There are hospitals for women and for men, for infectious cases, for persons under observation, a pharmacy, and an operating-room. On visiting the steerage and the third-class cabins I found that the remarks I made in my last communication in regard to the *Provence* apply equally to the *Chicago*. As for the state cabins, an air-shaft goes through them all, and the passengers can open wide or partially the louvred inlet by which they receive air, warmed in cold weather, from the thermotank. Near the ceiling and the floor there are apertures, so that the air from the cabins finds its way into the passages, where more or less natural ventilation carries it out. If the full complement of four persons sleep in these cabins they must be somewhat cramped for space. But this rarely happens, and on the *Rochambeau* the cabins are larger. Cabins should be a little longer than the beds, so that at the end there may be space for hanging up clothes, for little handbags, or for some small drawers. To pull a heavy cabin trunk from under the berth for every little trifle wanted during the voyage is somewhat trying, especially if the weather is so rough that the trunks have to be lashed in their places to prevent their being thrown across the cabin.

*Art of the Chef: Hygiene of the Kitchen.*

Of course, I did not fail to visit the *chef*. All the officers on board were particularly proud of their culinary colleague and felt how much the success of the French line depended on the choice of its *chefs*. At the time of my visit the ship's surgeon was deeply immersed in Brillat-Savarin's "Physiologie du Goût" which the cook had lent him; but the latter explained to me that he found Escoffier more useful. His bookshelf was well filled: there was a culinary encyclopædia, and among many other books quite a large volume devoted solely to the cooking of eggs. In answer to my questions, the *chef* explained that when he was employed by a British company he was not allowed to cook as he thought proper, for the English passengers could not appreciate delicate flavouring. One of the best dishes he ever made, a specially prepared *pâté*, was too tasty for the saloon passengers, and the greater part had to be eaten in the kitchen and by the crew. Judging from my experience on the *Chicago*, it seems that *gourmets* will have to travel on second-class boats to find the operators who know their trade. On these one-cabin boats there is compulsory dining. The passengers are not given the opportunity to feed badly, as in the first-class saloon. They are not allowed to order tasteless dishes and to eat them in the wrong order. Nor are they allowed to eat too quickly. Meals—lunch of four courses and dinner of five courses, properly ordered, flavoured, and artistically cooked—are served in due order, at very cheap prices. Further, though we had a fierce storm lasting three days and were pitched about unmercifully, I noticed comparatively little seasickness. Finally, I must add that the kitchen is well-ventilated and constantly cleaned out. The cooks have the necessary facilities for washing and keeping themselves clean, and my observation showed that they availed themselves of these sanitary advantages. Such are some of the reasons which assure the growing success of this new phase of ocean travel. But while it increases the frequency of inter-oceanic intercourse, it also augments the responsibilities of those who control the sanitation of the floating towns that now so frequently cross the broad and turbulent expanse of the Atlantic.

## MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

*National Medical Union a Permanent Organisation.*

THE annual general meeting of the National Medical Union was held in Manchester on Jan. 28th, Mr. William Coates presiding. Mr. F. H. Westmacott introduced a motion, which was seconded by Dr. J. Brassey Brierley, proposing that as a temporary organisation the union should cease to exist, and that it should be reformed into a permanent organisation of men who decline to allow their names to appear on the Insurance Act lists or panels, and who refuse to work the Act until the conditions of service are acceptable and conformable to the honour and dignity of the profession. It was felt that it was necessary to have a union to support non-panel men and to be a rallying point for those who might retire from service of the Act at any time. The motion was carried. The following rider was added to meet the case of men who, it was reported, intend shortly to retire from the panels:—

That members of the union and others who have joined the panels, but who intend to retire at the earliest opportunity, should retain their membership of the union, but if at the end of three months they do not so retire, they shall *ipso facto* cease to be members.

*A Bishop on the Insurance Act and the Medical Profession.*

The Bishop of Manchester, speaking at Manchester Cathedral on Sunday night, paid a tribute to the medical profession. He said that so strong is the faith that the causes of disease are not beyond our control, that he did not hesitate to say that if a physician were given an opportunity to choose between the power of working miracles as our Lord did and the power of discovering, for instance, the cause of cancer, he would undoubtedly choose the latter. The Bishop expressed his opinion of the attitude of the doctors to the Insurance Act in the following terms:—

It has appeared to some people as though the whole grievance has been a dispute over sixpence; but, so far as I can judge, they have desired only to secure that the work under the Act shall be thorough and not scamped; that the diseases of the poor should be regarded as important in the initial stages, and receive the same careful attention as the diseases of the rich.

It has not only been that they have contended strongly that their professional work should be submitted to the judgment of people who could understand it, but they have been really fighting the battle of

the poor, and they deserve the gratitude of the nation for the endeavour which they have made to secure the conditions under which medical service in the end should be a reality and not a sham. This, at all events, has been my impression of the controversy, and, in justice to the profession, I feel bound to record it.

Hospitals and dispensaries will continue to be necessary—at least for the worst and most needy cases. For the present, at all events, the Insurance Act has not diminished the work of the hospitals; they will still need to be supported. They will still afford an opportunity of bringing charity and science, love and knowledge, in touch with one another and with the poor.

Feb. 4th.

## LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

*Changes at the University and at the School of Tropical Medicine.*

Dr. J. W. W. Stephens has been appointed to the Alfred Jones chair of tropical medicine, vacant through the resignation of Sir Ronald Ross. Dr. Stephens has been connected with the Liverpool School of Tropical Medicine for the past ten years. During the last few years he has held the Walter Myers memorial lectureship. He graduated as M.D. at the University of Cambridge in 1898, and at one time held the John Lucas Walker studentship of pathology at that University. In 1897 he was appointed assistant bacteriologist to the Government of India, and was subsequently made a member of the Royal Society's Malaria Commission in Africa and India. He has taken an active part in the teaching work of the Liverpool School of Tropical Medicine, and has published much valuable research work upon tropical diseases. Dr. George Lissant Cox, assistant lecturer in pathology at the University, has been appointed chief tuberculosis officer for the county of Lancaster. Dr. Cox was an ardent worker in the Thompson Yates laboratory. He served for three years on the staff of the Liverpool Consumption Hospital, so that he is well equipped for the duties of his new post. The departures from Liverpool of Sir Ronald Ross, Professor F. G. Donnan, and Dr. Lissant Cox will create a blank in local medical circles not easily filled.

*The late Dr. William Carter.*

Dr. William Carter, who died on Feb. 2nd after a short illness, retired from practice about five years ago, when he removed to Deganwy. Dr. Carter's connexion with the honorary staff of the Royal Southern Hospital extended over 30 years, and he was for a long time a leading figure in the medical world of this city.

Feb. 4th.

## BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

*Presentations to Sir Thomas Chavasse.*

ON Jan. 30th the board and staff of the General Hospital and other friends expressed their appreciation of the able manner in which Sir Thomas Chavasse has performed his duties as honorary surgeon for the past 30 years, by the presentation of a three-quarter length portrait of himself in oils to be hung in the board-room of the hospital; of another of her husband to Lady Chavasse; and of an illuminated address to Sir Thomas Chavasse. The Lord Mayor, Lieutenant-Colonel Martineau, presided over a large company. Mr. J. B. Clarke, chairman of the presentation committee, in presenting the portrait, which was executed by Mr. A. T. Nowell, to be hung in the board-room, said they desired to do honour to a most worthy Birmingham citizen, the possessor of a good old family name well known and highly revered in the Midlands. They all deplored his absence as the result of an accident in the hunting field and wished him a speedy recovery. After studying in Edinburgh, Birmingham, Dublin, Vienna, and Berlin, he became assistant surgeon to the hospital in 1877, and in 1881 was elected a full surgeon, and so remained for 31 years. No one outside the walls of the hospital could have an adequate idea of the magnitude and scope, the self-denial, the anxiety, courage, patience, industry, and skill required for the post. If the governors could not have Sir Thomas Chavasse with them in that room they were determined to have the best reminder they could of him and his noble work. The portrait, which represents Sir Thomas Chavasse wearing the gown of a Fellow of the Royal College of Surgeons, was then unveiled, and accepted for the hospital by the Lord Mayor. Sir John Holder next presented to Lady Chavasse a portrait, the gift of the 171 subscribers to the fund. He remarked that they were also indebted to Sir Thomas Chavasse for having inspired that great benefactress to Birmingham, Miss Ryland, a near relative to Lady Chavasse, to bequeath £25,000 to the hospital. He was also instrumental in obtaining other large donations, and himself gave £1250 for the endowment of a bed. Mr. Gilbert Barling next asked the Lord Mayor to present an illuminated address to Mr. Arthur Chavasse on behalf of his father.

*The Death of Lord Ilkeston.*

Although Lord Ilkeston for some years had ceased to be actively engaged in medical practice in Birmingham, he was a very well-known figure in the city, and had been consulting physician to the General Hospital since 1890. He first came to Birmingham at the age of 20 to take up the appointments of medical tutor at Queen's College and assistant physician at the Queen's Hospital, and in 1868 he transferred his services to the General Hospital, where he was made a full physician. He took a very active part in local medical organisation, which prepared the way for the great part he played afterwards in the British Medical Association. He also served his apprenticeship to politics in the town council in the early Chamberlain days. He will always be remembered as a great Birmingham citizen. His son, who succeeds to the title, is stipendiary magistrate to the city.

Feb. 4th.

## SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

*The Irvine Chair of Bacteriology.*

THE trust funds accumulated in accordance with the will of the late Mr. Robert Irvine have now reached the sum of £30,000. The income from £25,000 of this is to be used as salary for a Robert Irvine professor of bacteriology in the University of Edinburgh, and the remainder of this endowment is to be employed for the equipment of class-rooms and laboratories in connexion with the new chair.

*Edinburgh Medical Committee.*

A meeting of the medical profession in Edinburgh was held on Jan. 29th at the Society of Arts Hall, and it was decided that a local Medical Committee should be appointed to watch over medical interests in connexion with the working of the National Insurance Act, and to advise the local Edinburgh Insurance Committee upon medical questions. The meeting then elected a committee consisting both of practitioners upon the panel and of those who are not; and application is to be made to the Scottish Insurance Commissioners for recognition of this body in accordance with the terms of the Act.

*Memorial to the late Dr. G. A. Gibson.*

A meeting was held last week at the Royal College of Physicians of Edinburgh, under the chairmanship of the President, Dr. J. J. Graham Brown, to consider the foundation of a memorial to the late Dr. G. A. Gibson. It was decided, upon the proposal of Dr. Byrom Bramwell, seconded by Mr. J. W. B. Hodsdon, that a memorial should be founded, and a committee for this purpose was appointed.

*Dr. G. A. Gibson and the University of St. Andrews.*

The University Court of St. Andrews have recorded their deep regret at the death of their former colleague, Dr. George Alexander Gibson, and their sense of the great loss caused thereby to science, medicine, and Scottish culture. "They recognise," says the minutes of the meeting, "how great was his distinction as a physician, an original investigator, and a learned and accomplished writer on many branches of medicine. They recall with thankfulness his valuable services as a member of University Court, and the constant kindness, courage, and courtesy which he showed in all the relations of life. They grieve over the bereavement of his widow and family, and direct that a copy of this minute be sent to them as an expression of sympathy."

*Aberdeen Eye Institution.*

At the annual meeting of subscribers to this institution the report of the directors drew attention once again to the unsatisfactory state of the accounts, although the

expenditure had been cut down to the minimum, representing only 2s. 2d. per case treated (including 2197 operations, and the cost of keeping 53 in-patients with an average stay in the institution of 30 days each). Dr. A. R. Galloway in his report stated that workmen treated minor eye injuries far too lightly, frequently using dirty instruments—such as pins—for the removal of foreign bodies, and they often continued work after receiving an injury. These were the cases which resulted in septic ulcers, with frequent impairment and sometimes loss of vision. The large fall in the number of school children affected—1387 for the previous 12 months—led him to hope that school inspection was having a desirable effect. The report further stated that there were about 1700 men employed as stonecutters in Aberdeen and district. One out of every two received medical aid for eye injuries every year, and out of a total of 809 eye injuries to stonecutters in Aberdeen during one year 645 were treated at the institution. Principal George Adam Smith acknowledged the very great benefits which the University derived from the institution. In doing so, he recalled that the institution owed its origin in a large measure to the University itself, having been founded in 1835 by two eminent University men, Sir James McGregor and Dr. Cadenhead.

*Gray's Hospital, Elgin, and the National Insurance Act.*

At a meeting of the Elgin town council held on Jan. 27th the matter of a resolution of the managers of Dr. Gray's Hospital, Elgin, in connexion with insured persons was discussed. It was stated that the funds for the erection of the hospital were left by Dr. Gray in 1807 for the express purpose of treating the sick poor of Elgin. The resolution of the managers of the institution recently published in the newspapers seemed to stultify this aim, and the following resolution on the matter was adopted by the meeting after some discussion :—

The council, in view of the intimation that the trustees and managers of Dr. Gray's Hospital had passed a resolution that no insured persons under the Insurance Act will be entitled to receive treatment at the hospital except in cases of emergency, unless an arrangement is made for payment to the managers of the hospital of £2 2s. per week as an indoor patient or £1 1s. per week as an outdoor patient, and considering that under Dr. Gray's settlement the town council had power to inspect the hospital and state to the trustees and managers such abuses as they may observe, resolve to remit to the law committee, with Councillor Forsyth added thereto, to consider the legality of the resolution of the trustees and managers, and, if so advised, make a representation to them to have their resolution withdrawn or at least amended.

A great deal of feeling has been aroused in the town of Elgin over this matter.

Feb. 4th.

## IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

*Evidence of Sickness for the Sickness Benefit.*

IN the Civil Service Supplementary Estimates for the year ending March 31st next a grant of £50,000 is provided for the Irish National Health Insurance Fund towards the cost of medical certificates of sickness and other administrative expenses arising out of the absence of medical benefit in Ireland. To what expenses other than the provision of evidence of sickness and disablement this grant can be applied is not clear. The certificate question is a source of trouble both to the insured and to the medical profession. The profession has agreed on a uniform charge of 2s. 6d. for certificates, but so far the societies and Insurance Committees, though for the most part they demand a medical certificate as evidence of sickness, have made no arrangements to pay. The Act puts the onus on the societies, which endeavour to transfer it to the members. Medical men are consequently put in the difficult position of demanding the fee from the applicant, who is often unable to pay. In many instances such members are deprived of the benefit to which they are legally entitled. At a meeting of the practitioners of South Tipperary, held in Clonmel last week, a resolution was unanimously passed declaring it an unprofessional act for any medical man in the district, either in private or Poor-law practice, including workhouse hospitals, county infirmaries, or other hospitals, to give certificates for sick benefits to insured persons pending a final settlement of the question. In most cases, however, medical men are demanding the 2s. 6d. fee, leaving the member to recover it from his society, as the only way by which the societies can be caused to make suitable arrangements. The additional grant of £50,000 ought to make such arrangement easier. In the attempt to obtain other than medical evidence as proof of sickness some societies have adopted strange expedients. In Dublin lay inspectors, said to be nurses, have visited the sick, even in hospital wards, and examined the patients and the hospital records; while in a village in the south a railway porter is engaged in his spare time as a lay inspector, and has carried out his duties to the extent of examining a gi l's knee.

*The Corporation of Dublin and Tuberculosis.*

At a conference last Tuesday between the public health committee of Dublin corporation and the county borough Insurance Committee the most pressing problem was the upkeep of the Collier Dispensary, now subject to the public health committee, but for which no provision has been made in the city estimates. The Insurance Committee were asked to transfer to the public health committee almost their entire income, the latter body undertaking to provide for all classes of tuberculosis. No scheme has yet been drafted, but a joint subcommittee probably will shortly be appointed to draft one. The corporation possesses a dispensary, and is in joint possession of a sanatorium, and it is understood that some of the Treasury grant to which it is entitled will be spent in providing accommodation for advanced cases. It hopes, therefore, soon to be in a position to give the Insurance Committee any form of treatment it may desire. The Insurance Committee probably will meantime advance a small sum to meet the pressing needs of the Collier Dispensary.

*Dinner at the Royal College of Surgeons.*

The Charter Day dinner of the Royal College of Surgeons was held last Saturday, Mr. R. D. Purefoy, the President, being in the chair. Before dinner the honorary Fellowship of the College was conferred on Surgeon-General Sir W. Launcelot Gubbins, Director-General R.A.M.C., and Sir Berkeley G. A. Moynihan. Among those who spoke to the various toasts after dinner were the Lord Lieutenant, the president, vice-president (Mr. F. Conway Dwyer), and honorary secretary (Sir Charles A. Cameron) of the College, the two new honorary Fellows, the Rev. J. P. Mahaffy, and Dr. James Little.

*The National Insurance Act in Belfast.*

The Belfast Insurance Committee has made a satisfactory arrangement with the Local Medical Committee for a temporary scheme of domiciliary treatment of tuberculous patients, which has been confirmed by the Irish Insurance Commissioners, but the Committee has so far been unable, on financial grounds, to arrange with the chemists. For the post of tuberculosis medical adviser Dr. Foster Coates was chosen by the Insurance Committee out of three names submitted. Great dissatisfaction has been expressed in medical circles in Belfast at the active canvassing that was practised by some candidates for the post.

*The Belfast Corporation and the Tuberculosis Problem.*

The public health committee of the Belfast corporation is at present considering a scheme for dealing with the whole question of tuberculosis, and conferences are taking place between the members of this committee and a subcommittee of the Local Medical Committee. A statement has been submitted on behalf of the latter body for the consideration of the Belfast public health committee with a view to a satisfactory settlement.

*Typhoid Fever in Belfast.*

After having been for several years free from typhoid fever, that disease has again appeared in Belfast. The cases occur sporadically all over the city, and apparently cannot be traced to any known common cause, such as milk, or water, or the eating of shell-fish. The only point common to all the cases is the insanitary condition of the houses in which they have occurred, yet it is not clear why this factor should operate during wet weather when it was apparently non-existent in the dry summer of 1911. There are over 20 cases in Purdysburn city fever hospital at present.

*The Forster Green Hospital for Consumption.*

At the annual meeting in connexion with the Forster Green Hospital for Consumption, held in Belfast on Jan. 30th, it was reported that 261 in-patients were admitted

during 1912, and 979 new out-patients were seen. The evil effect of the Insurance Act in curtailing subscriptions, due to the expenditure enforced on all employers under the Act, was mentioned, and apprehension was expressed as to the future effect of the Act upon the work of the hospital.

Feb. 4th.

## PARIS.

(FROM OUR OWN CORRESPONDENT.)

*Antityphoid Inoculation in the Navy.*

ON Jan. 20th M. Roux laid before the Academy of Sciences a communication from M. Chantemesse, in which the fact was recalled that the struggle for pure drinking water had been going on for 25 years. It was not, however, always possible to secure pure water, and, moreover, the prophylactic problem was not entirely confined to this factor. From its inception bacteriology had sought to discover a vaccine against typhoid fever. In 1887 Fraenkel and Simmonds, Bauer and Peiper, showed that by injecting into animals small doses of living and virulent typhoid bacilli, their resistance to the virus of typhoid fever was augmented. This inoculation with living non-attenuated microbes was, however, too dangerous to admit of its application to man. M. Chantemesse, in conjunction with M. Widal, then made known a typhoid vaccine, consisting of typhoid bacilli sterilised by heat, which was harmless, and yet three or four injections of which conferred on animals immunity against the virus in the great majority of cases. On its application to man it was found to confer a like immunity on him. In 1896 this vaccine was tried in the service of M. Chantemesse on his pupils, and little by little its use was extended to other countries. After a year's trial on soldiers vaccinated with the heated vaccine the United States made this prophylactic procedure compulsory in the army. In 1903 Wassermann extolled the polyvalent bacillary vaccine and also the autolysates, which method has been recently taken up in France. In 1909 M. Chantemesse called on the Academy of Medicine to appoint a committee to study this method of prophylaxis against typhoid. After a favourable report from the Academy the Minister of War instructed M. Chantemesse last year to institute, in conjunction with a *médecin principal de l'armée*, this method of vaccination among the troops on the Algerio-Moroccan frontier. In Morocco no vaccinated person was attacked with typhoid. M. Chantemesse has always stedfastly adhered to the method of preparing the vaccine by heat sterilisation, and preserving it in a creosote emulsion, which prevents its subsequent accidental contamination. On April 5th, 1912, the Minister of Marine, M. Delcassé, authorised the systematic vaccination of the crews of the navy and the workmen at the dockyards with M. Chantemesse's vaccine. The chief of the navy medical department has recently communicated to M. Chantemesse, with the authority of the Minister, the results of the vaccinations practised among the crews of the three large squadrons and of the flying squadrons. The greater part of this marine population, some 67,845 persons, which had not been subjected to antityphoid vaccination, had sustained between April 5th and the end of December, 1912, 542 cases of typhoid fever and 118 cases of febrile gastric attacks. On the other hand, 3107 persons who had never had typhoid were vaccinated. These vaccinated individuals, who were on the same vessels as the non-vaccinated, were present in the same regions and were subject to the same conditions of work, of fatigue, of pleasures, and to the same chances of contagion, were protected against the disease in a very satisfactory manner, and did not incur a single case of typhoid. Only one man had a febrile gastric attack, which was cured. Similar information coming from widely separated parts of the world gives room for hope that little by little typhoid fever will entirely disappear from civilised countries.

*Resection of the Large Intestine for Constipation.*

In the case of a patient who consulted Dr. Pauchet for gastric ulcer, because of vomiting and pain supervening two or three hours after meals, X ray examination showed nothing abnormal in the stomach, but that the bismuth accumulated for two or three days in the cæcum. M. Pauchet, therefore, performed ileosigmoidostomy. The gastric trouble was reflected from the large intestine. The palliative result of the operation, however, was *nil*, the patient continuing to suffer with his stomach as before. The only effect was more frequent and softer stools. Radiography after the operation showed a reflux of part of the fæcal matter to the cæcum, where it stagnated for some time. In consequence of the persistence of the stomach trouble and the patient's consequent malnutrition, Dr. Pauchet operated again for the removal of the large intestine, having again found the stomach normal on examination. On laparotomy he found the cæcum and the ascending colon absolutely full up to the hepatic flexure, and he removed the cæcum, ascending and transverse colons, stopping at the descending colon. The operation was very easy. The peritonisation of the denuded surfaces presented no difficulty. The abdominal wall was sutured in one layer with a bronze suture. The patient was out of bed on the fifth day and left the hospital on the fourteenth.

*Hygienic Delivery of Bread.*

As an instance of the increasing attention that is being paid to hygienic matters, it may be mentioned that M. Herriott, the mayor of Lyons, has pointed out that the open delivery of bread, as in baskets, barrows, and the like, exposes it to contamination with dust and filth. He has therefore issued a decree that loaves delivered by any other method than in a closed vehicle must be completely wrapped in an impermeable covering.

*The Purification of Oysters by Retention in Filtered Sea Water.*

Of late years those who are fond of oysters have been exercised over various accidents, such as typhoid fever, that have ensued on eating them. Measures of various kinds have been taken in certain places to prevent such accidents, but complete security has not yet been attained. M. Budin and M. Chevrel have made some experiments on the purification of oysters from bacteria by keeping them in filtered sea water. On Jan. 13th they reported the constant and clear results obtained, which fully confirm those of M. Fabre-Domergue. After six days' retention in a current of sea water capable of renewing the entire contents of the vessel every two hours, the microbic purification of infected oysters in the marble container was complete in every case, and particularly with regard to the bacillus coli. At the end of this time the oyster had undergone no changes that could depreciate its market value. In a second series of researches the experimenters verified the disappearance of the typhoid bacillus under like conditions from oysters that had been artificially infected. The process of retention in filtered sea water in a sand filter without submergence, invented by M. Fabre-Domergue, may thus afford a simple solution to the problem of protecting oysters against bacterial contamination.

Feb. 3rd.

## VIENNA.

(FROM OUR OWN CORRESPONDENT.)

*Salvarsan.*

Dr. Kren, in a paper read before the Medical Society in Vienna recently, summarised the results of careful observations made on 285 patients who suffered from syphilis and were treated with Professor Ehrlich's salvarsan. These patients, whose cases were followed up for a long time (over two years), received more than 600 injections of the remedy. In the year 1911, at the Clinic Riehl in Vienna, whence this report comes, a combined treatment of syphilis was introduced, consisting in an injection of 0·4 gramme of salvarsan, followed up by 30 inunctions with mercury ointment, these being immediately succeeded by another injection of 0·4 gramme of salvarsan as the final stage. The effects of this method were much better than those previously obtained. The general result of these investigations was summarised as follows. Salvarsan was a powerful remedy against syphilis, changing the course of the disease. It was not only useful in the primary stage, but was able to prevent the occurrence of secondary manifestations if employed early enough, before the serum reaction became positive; but the glands remained in the same state as at the time of injection, showing thus the symptoms of latent syphilis. Such cases have remained free from further complications for over two

years. In the secondary stage the remedy was less successful, but the important matter was either to give repeatedly increasing small doses or to combine the injections with inunctions of mercury. Large single doses of salvarsan were not to be recommended. The tertiary and the hereditary manifestations of syphilis were very successfully influenced by salvarsan. If care was taken and the contra-indications attended to there was no danger in its use. These contra-indications included the existence of (1) any disease which was aggravated by increase of the blood pressure; (2) all grave affections of the nerves; (3) non-syphilitic diseases of the inner and middle ear, as well as occupations which injured the ear by the noise they produced; (4) all diseases of the glands which might cause a breaking down of them; and (5) localisations of syphilis which might endanger life if they became swollen by the Herxheimer reaction, as, for instance, in the trachea or on the laryngeal articulations. Dr. Kren stated emphatically that fear to use salvarsan in relapses of a syphilitic disorder of the auditory nerve was not justified. He said that in cases of syphilis not treated with salvarsan the auditory nerve suffered just as frequently as when salvarsan was given, and the symptoms in question were promptly remedied by the use of it.

*Professor von Noorden.*

Professor von Noorden, the famous specialist for diseases depending on disordered metabolism, is said to intend leaving Vienna and returning to Frankfort, where he will continue to practise untrammelled by clinical duties. By the end of this year he will therefore no longer occupy his present position. Energetic efforts are being made to induce him to alter his decision, but they have hitherto been unsuccessful.

*Psychological Experiments for Forensic Purposes.*

The discrepancies of statements made by witnesses in courts of law are well known, as is also the fact that it is hardly possible to get several identical correct descriptions of occurrences if details are required. The Psychological Juristic Society of Vienna recently had an instructive ordinary meeting in which this subject was tested. A few weeks before this ordinary meeting there had been a special meeting in which one of the members, after a quarrel, applied abusive epithets to the president. The whole thing had been prearranged, and the respective parts of the two principal actors had been well studied by them, according to a written text. Of course, nobody knew anything of the arrangement, except the few who took part in the simulated quarrel. Two weeks after the incident had taken place all members of the society were asked to give verbally or in writing their evidence, and a regular hearing of the case was held in the ordinary meeting, with two real judges and two barristers for the prosecution and defence. When the witnesses gave their evidence, it was found that although well-educated, intelligent people were present at the supposed quarrel, not one of the statements made by them was correct. Even as regards the duration of the episode and the time of occurrence, there were large discrepancies in the statements. Acting on the evidence of the witnesses, the accused person, who was a lawyer holding the title of doctor of jurisprudence, was pronounced guilty. The written text of the whole affair was then read aloud and compared with the statements made by the witnesses, whereupon it appeared that the account of the "quarrel" given by the eye-witnesses and others who were present on the occasion in question were unreliable in numerous points, and that in reality the incident had taken place in a way which would have exculpated the accused. This experiment showed how much the influence of excitement might be detrimental to exact perception of facts following each other in rapid succession.

*False Identification.*

The difficulty of relying upon a witness was observed quite recently here in a dramatic way when the body of a middle-aged and unknown woman was found in a park. A man positively declared the dead woman to be his wife, from whom he had been divorced two years ago. She was accordingly buried as his divorced wife. A few weeks later the woman who was really the divorced wife returned to Vienna, and was astonished at the declaration that she was legally dead. In this instance the man's "identification" of the deceased woman received apparent corroboration from statements made by former friends of the wife, they being no doubt influenced by the husband's declarations.

Feb. 3rd.

## UNITED STATES OF AMERICA.

(FROM OUR OWN CORRESPONDENTS.)

*Vital Statistics of the City of New York, 1912.*

Dr. Ernst J. Lederle, Commissioner of Health, reports that during the year ending Dec. 31st, 1912, 73,008 deaths occurred, giving a death-rate of 14·11 per 1000 population. This number is less by 2415 deaths than that reported during the year 1911, and will probably compare favourably with that of any other large city in the world. As compared with the decennial averages from 1902 to 1911 inclusive, typhoid fever has decreased 34 per cent., small-pox 95 per cent., measles 30 per cent., scarlet fever 38 per cent., diphtheria and croup 48 per cent., tuberculosis of the lungs 17 per cent., other forms of tuberculosis 11 per cent., while pneumonia (lobar and broncho-) showed a decrease of 2678 deaths. But the greatest gain is seen in diarrhœal diseases under five years of age, a decrease of 2657 deaths. Other decreases were in cirrhosis of the liver 266 deaths, in Bright's disease and nephritis 1114, puerperal diseases 206, accident 687, suicide 174, appendicitis 15, cerebro-spinal meningitis 604, and bronchitis (acute and chronic), 1042. Increased mortality was seen in cancer by 295 deaths, homicides by 57, organic heart diseases 1455 (offset, however, by a decrease of 1449 deaths from apoplexy and disease of the arteries). Mortality was decreased at all ages; in children under 1 year by 5159 deaths; under 5 years by 8463; between 5 and 65, 7570; 65 and over, 824. The decrease among the females reached 20 per cent.; among males, 18 per cent. The mortality among the coloured population was stationary. There were 28,242 deaths in institutions, a decrease of 658, while the deaths in tenement houses numbered 30,579, a tremendous decrease of 12,781. The general death-rate for the previous decennium was 17·37, so that the 14·11 of 1912 gives a decreased rate of 3·26 per 1000 population. The infant mortality during the year was the lowest ever recorded in the city—viz., 14,289 deaths, which gives a rate of 105 per 1000 births. The number of births reported during 1912 was 135,625, an increase of 1083 over 1911. The birth-rate for the year, 26·22 per 1000, is the lowest since 1906. Stillbirths were reported as 6617, a decrease of 1379 on the decennial averages. The number of marriages reported was 52,391, or 10·13, the highest marriage-rate in five years.

*The Possibility of a National Health Department.*

It is confidently expected that the new Congress, to meet in March, will make it possible to place in operation a National Health Department, either independent of existing departments or as an adjunct to our active and efficient Public Health Service; while in New York the State executive is certain to advocate and push through the Legislature new laws, or amendments to those already in existence, amplifying the powers of the State Department of Health, giving greater scope to officials, State and municipal, to enforce sanitary measures.

*Antityphoid Inoculation.*

Since the beginning of the year the New York City Board of Health has been prepared to inoculate all applicants gratis with antityphoid vaccine through its health inspectors, either at the applicant's residence or at the central office of the department. The vaccines will also be furnished free to practitioners. All requests for treatment must come through the attendant or a medical inspector of the department. This, it is hoped, with more effective control of the milk-supply, will practically put an end to typhoid fever.

*Eugenics.*

Eugenics generally forms an absorbing topic for discussion in both professional and lay literature in America. The sane and humane power behind this movement is, however, less that of the numerous writers or the pseudo-scientist than of those who are making comprehensive and exhaustive study of the question. A propaganda of education is already

taking place, which it is hoped may exercise a salutary influence on the law-makers.

*Street Accidents.*

During 1912, 532 persons were killed in street accidents in New York City, 230 of these being children. The number of persons injured was 2363.

*A Typhoid Carrier.*

The typhoid carrier, known as "Typhoid Mary," who was detained for three years on North Brother Island as a public menace by the New York Board of Health, and who brought a suit against the board, has been advised by the courts that she has no cause for action, as the board acted entirely within the power conferred upon it by the city charter.

*Regulation of the Sale of Milk in New York.*

The New York city department of health has recently issued a circular laying down rules for the sale of milk in the city. There will be three grades—A, B, and C. Grade A will comprise all milk suitable for the use of infants and children, and is to be sold only in bottles. Grade B is that suitable for adults, and will comprise pasteurised milk and selected raw milk, and may be sold in either bottles or cans. Grade C is milk suitable for cooking purposes only, and will be the poorest grade permitted to be sold. Bottles and cans must be clearly labelled to indicate to which grade the contents belong, the markings for each grade to be of a distinctive colour. Pasteurised milk must be plainly so marked. Only Grades A and B are allowed to be sold in restaurants, at lunch counters, &c., for immediate use by adults, while Grade A milk alone is recommended for children. Pasteurised milk is regarded by the department as safer than raw milk of the same grade.

*The Mary Putnam Jacobi Fellowship.*

The Woman's Medical Association of New York City offers the Mary Putnam Jacobi Fellowship of $800 available for post-graduate study, open to any woman graduate of medicine. The amount of the endowment to date will permit of a biennial award. Upon the completion of the fund this will be made annually. The Fellowship will be awarded, not by competitive examination, but upon proof of ability and promise of success in the chosen line of work. Applications for 1913–14 must be in the hands of the committee of award by April 1st, 1913, and must be accompanied by (1) testimonials as to thoroughly good health and (2) as to ability and character; (3) a detailed account of educational qualifications; (4) a statement of the work in which the applicant proposes to engage while holding the Fellowship; (5) examples, if any, of her work, in the form of articles, or accounts of investigations which she has carried out. The award will be made by June 1st, 1913, and will take effect from Oct. 1st, 1913, to Oct. 1st, 1914. All applications for this Fellowship should be forwarded to the committee of award, which consists of Dr. Emily Lewi (chairman, 35, Mt. Morris Park West, New York), Dr. Martha Wollstein, Dr. Mathilda K. Wallin, Dr. Helen Baldwin, and Dr. Emily D. Barringer.

Jan. 27th.

A POST-GRADUATE vacation course, open to foreign medical men, will be held at the Medical Clinic of the Hôtel Dieu, Paris, under the direction of Professor A. Gilbert, beginning on Monday, March 17th, and ending on April 1st. The subject of the course will be Recent Views on Diseases of the Liver, Pancreas, and Spleen. The course will consist of 24 lessons—two on each working day, at 10.30 A.M. and 3 P.M. respectively. The instructors will be Dr. Jomier, Dr. Herscher, Dr. E. Chabrol, Dr. Maurice Villaret, Dr. Lippmann, Dr. Bénard, Dr. Paul Descomps, and M. Deval, M. Guilleminot, M. Durey, and M. Dausset. There will be individual examination of patients and instruction in prescribing, the use of apparatus and laboratory work, all thoroughly practical, and a certificate will be given at the end of the course. The fees (100 francs) should be sent by post-office order to M. Deval, Chef de Laboratoire, Hôtel Dieu, Paris. In September a practical course on the Application of Laboratory Methods in Diagnosis will be held under the same conditions as in former years.

# Obituary.

## THE RIGHT HON. LORD ILKESTON, P.C., M.D. ERLANG., F.R.C.P. LOND., D.C.L. DURH., LL.D. MONTREAL,

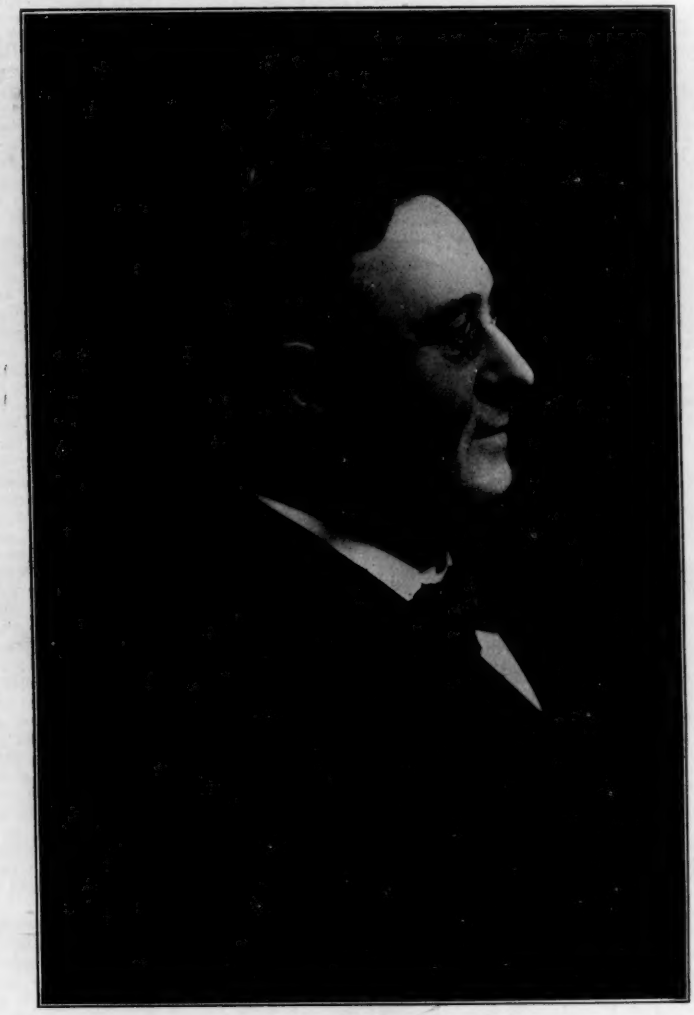
FORMERLY PARLIAMENTARY SECRETARY TO THE LOCAL GOVERNMENT BOARD; CONSULTING PHYSICIAN TO THE BIRMINGHAM GENERAL HOSPITAL.

BY the death of Lord Ilkeston, which took place at his residence in London on the last day of January, the medical profession has lost its remaining representative in the House of Lords, Lord Lister having died last year. Lord Ilkeston did a mass of good work, both for his country generally and for the profession of which he was a distinguished member; and while it is impossible to consider that he won the rare honour of hereditary rank by his scientific position, he none the less owed his early recognition as a valuable public servant to his application of the teachings of medicine and sanitation to workaday life.

Balthazar Walter Foster was the eldest son of Balthazar Foster, of Beaulieu, Hampshire, and of Marion Green, Cambridge, in which latter town he was born on July 17th, 1840. He received his early education at Drogheda Grammar School and proceeded thence to Trinity College, Dublin. After studying medicine in Dublin at Trinity College and at the Royal College of Surgeons, he qualified L.R.C.P. and L.R.C.S. of Ireland in 1860, and almost immediately went to Birmingham, where he became medical tutor at Queen's College, and assistant physician to the Queen's Hospital. In 1864 he obtained the M.D. degree of the University of Erlangen, and became a Member of the Royal College of Physicians of London a year later. He was elected to the Fellowship in 1873. In 1868 he was appointed physician to the Birmingham General Hospital, an institution in which he took a keen interest, and with the practice and educational routine of which he was associated for so many years. He did not relinquish his active professional duties at the hospital until 1890, when he was appointed consulting physician. During this period of his career he did indeed much to reorganise medical education in Birmingham and, among other things, played a prominent part in bringing about the amalgamation of Queen's College and Sydenham College. He was elected Professor of Medicine in the College in 1868, retiring as Emeritus Professor in 1892.

Identifying himself with almost every phase of municipal life he entered the city council of Birmingham in 1883. As a member of the city council, on which he served for six years, he did excellent work for the health department, and, as had already happened before in Birmingham in the notable example of Mr. Joseph Chamberlain, he became marked out for public work of an important kind. It was seen that the talent which he displayed within the limits of municipal life would find a larger scope in general politics. He soon became one of the most prominent members of the local Liberal association, and in 1885 he successfully contested the city of Chester in the Liberal interest. Subsequently in the spring of 1887 he was returned for the Ilkeston Division of Derby, holding the seat until his retirement from the House of Commons in 1910, being one of the comparatively few fighting politicians who have been able to retain an unbroken hold on a constituency for over 20 years. From 1886 to 1890 he was chairman of the National Liberal Federation. In 1892 his work and influence were recognised by Mr. Gladstone, who in the Government formed that year selected Foster as Parliamentary Secretary to the Local Government Board. Foster was the first medical man to be appointed to a position in any political administration, and while his appointment was partly due to his political work in Birmingham, it was clear from the nature of the office which he was selected to fill that his medical position was not overlooked.

At the Local Government Board he was recognised by both sides of the House as a thoroughly able and conscientious administrator who had the welfare of the public and the progress of medicine always at heart. His professional knowledge, organising ability, and prompt application of his knowledge to the needs of the time enabled him to deal successfully with the outbreaks of cholera with which the country was threatened during his period of office, and it was partly in recognition of the



THE RIGHT HON. BALTHAZAR WALTER FOSTER, P.C., M.D. ERLANGEN, F.R.C.P. LOND., FIRST BARON ILKESTON.

*(Reproduced from a photograph by Messrs. Elliott and Fry, Ltd., London.)*

great assistance which he thus rendered to his country that in 1887 the British Medical Association bestowed upon him its gold medal for "distinguished merit." In the British Medical Association, within which from time to time he held almost every appointment, his activities on behalf of the profession found wide scope, and it was in this Association, as he himself said when in 1892 a dinner in honour of his appointment was given to him, that he received his chief training for public work. On the return of the Liberal Party to power at the close of 1905 Sir Walter Foster was made a Privy Councillor, but he received no portfolio from Sir Henry Campbell-Bannerman, an omission which was probably dictated by the necessity of finding room for a younger generation that had grown up in the Liberal Party during long deprivation from office, but which, none the less, elicited much comment.

Foster's connexion with the British Medical Association was for many years, as has been already said, very close. When in 1872 the Association held its annual meeting in Birmingham he undertook the duties of secretary, and in 1884 to 1887 he was President of the Council. In the section of Public Medicine at the meeting in Birmingham in 1892 he delivered the annual address, and dealt with the relations between the public and the medical profession so far as public health is concerned in the manner of one who knew—as an administrator and not as a visionary. He pointed out that there could be no danger in a civilisation like that of Great Britain at the present day of medical tyranny or of the curtailment of individual liberty beyond that which was necessary in the interests of the public good for the suppression and prevention of disease, and if more such public pronouncements were made nowadays it is quite possible that good might come from them.

For ten years Foster was one of the three Direct Representative members for England on the General Medical Council. He was first elected to the Council in 1886, immediately after the Medical Act had been amended to give registered medical practitioners the power of electing their own representatives, his colleagues being the late Dr. J. G. Glover and the late Mr. Wheelhouse. On the Council his voice was heard attentively always—indeed, the first selections made by the medical profession of their Direct Representatives proved extremely happy. The principle of direct representation was viewed by many on the Council with grave distrust, but the calm and sagacious assistance which that body received from Foster, Glover, and Wheelhouse completely answered the critics of a popular departure.

In February, 1910, after nearly 25 years of active political work in the House of Commons, he resigned his seat for the Ilkeston division, and in the summer of the same year his public services in and out of Parliament were rewarded by his elevation to the peerage. The appearance of his name among the Birthday Honours gave great pleasure to the medical profession, whose interests he had never forgotten amidst the stress of political life. He took his seat in the House of Lords as Baron Ilkeston, and was thus the second member of the medical profession to be created a peer. For many years he was a justice of the peace for the county of Warwick, and in 1910 he was presented with the freedom of Ilkeston.

Among the many academic distinctions which were bestowed upon him were the honorary D.C.L. of the University of Durham, which he received in 1893, and the LL.D. of Montreal, which was conferred upon him in 1897 after the meeting of the British Medical Association held in that city. He was also the first President of the Irish Medical Schools and Graduates Association.

Land reform and the extension of small holdings were among the subjects in which he was greatly interested, and he was President of the Land Reform Association for several years and was also President of the Allotments and Smallholdings Association. Although his life was so fully occupied in other directions he was a frequent contributor to the medical press, and was for some years a valued member of the staff of THE LANCET and of the *British Medical Journal*. He also contributed to the literature of medicine both from the point of view of the treatment of disease and in the wider aspect of public health. Among his published works were "The Use of the Sphygmograph in Heart Disease," "The Use of Ether and Etherised Cod-liver Oil in the Treatment of Phthisis," "Clinical Medicine," "Method and Medicine," "The Prince's Illness: its Lessons,' "Therapeutics of Diabetes Mellitus," "The Comparative Mortality of Birmingham and other Large Towns," "Diabetic Coma-Acetonæmia," "Political Powerlessness of the Medical Profession," and "The Public Aspects of Medicine."

He married Emily, daughter of the late W. L. Sargant, of Edgbaston, and had four children. His surviving son, the Hon. Balthazar Stephen Sargant Foster, succeeds to the title. The funeral took place at Brookwood Cemetery on Monday, Feb. 3rd, and a memorial service was held at St. Margaret's, Westminster, on the same day.

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## JOHN FREDERICK JOSEPH SYKES, M.D., D.Sc. EDIN.,

MEDICAL OFFICER OF HEALTH OF ST. PANCRAS.

WE regret to announce the death, on Jan. 28th, of Dr. J. F. J. Sykes, the well-known medical officer of health and authority on questions of public health and sanitation.

Dr. Sykes, who was in his sixtieth year, was born at Brighton, where he received his early education. Subsequently he studied at Paris and Frankfort-on-Main and at Guy's Hospital, University College Hospital, and in the University of Edinburgh, taking the English conjoint qualification in 1878, in which year he also graduated M.B. at Edinburgh University. In 1880 he took the B.Sc. degree, and in 1893 the M.D. of his university. He served for a time as resident medical officer of the French Hospital, but almost from the commencement of his career he devoted himself to the public health side of his profession. He was for many years an assistant examiner in hygiene in the Science and Art Department of South Kensington.

Dr. Sykes's life-work may well be said to have been the improvement of the public health of the metropolis. In 1888 he directed public attention to the insufficient control over the burial and identification of deceased persons and the verification and certification of deaths, and in the following year brought to notice the lack of proper hospital accommodation for cases of diphtheria in the metropolis. When the Select Committee of the House of Commons was appointed in 1893 to investigate the subject of death certification, he gave evidence before that committee with regard to the matter in its many aspects, and two years later drew attention to the danger of midwives spreading puerperal fever. In 1895 he gave evidence before the Poor-law Schools Committee on the spread of disease in barrack schools. In 1901 he initiated the notification of chicken-pox during the prevalence of small-pox. Among his colleagues in the public health service his opinion was very highly valued.

Dr. Sykes was a member of the Faculty of Medicine of the University of London and a Fellow of the Royal Statistical Society. The latter body awarded him the Howard Medal in 1900 for a competitive essay on the Results of State, Municipal, and Organised Private Enterprise on the Housing of the Working Classes in London and other Large Cities. He was also Milroy Lecturer at the Royal College of Physicians of London in 1901, when he took for his subject Public Health and Housing: the Influence of the Dwelling upon the Health in Relation to the Changing Style of Habitation. The suggestive and valuable lesson of those lectures was that the relief of the pressure of population would ultimately be brought about by the improvement of the means of transport between the suburbs and urban centres; the building of additional houses in the suburbs; the attraction to the suburbs of the better classes and those able to live at a distance; and the slow but ultimate relief of the pressure in the middle zone by the movement and circulation of the population and the gradual vacating of houses occupied by single families and subletting in separate dwellings. The remedy for dilapidation and deterioration would be brought about by the reconstruction of the worst areas and houses in healthy flats, the adaptation of the best streets and houses of an unhealthy "floor" type to a healthy "flat" form of construction to suit the altered mode of usage, and the supplementing of sanitary laws and by-laws with the dwelling as the basic unit.

A Fellow and member of the council of the Sanitary Institute, he for some years was co-editor of the Transactions and a member of the board of examiners. He was President of the Incorporated Society of Medical Officers of Health and a member of the Epidemiological Society, of the Société Française d'Hygiène, of the Société d'Hygiène Publique de Paris, and of the Deutscher Verein für

öffentliche Gesundheitspflege. At one time he held the position of lecturer on public health at Guy's Hospital. He was a member of the organising committee and honorary secretary of the Section of Architecture and Hygiene at the International Congress of Hygiene in 1891, and was a delegate to the International Congress of Hygiene and Demography at Budapest in 1894. To the literature of the subjects in which he was so much interested he added largely, and for ten years compiled the annual health reports of Middlesex. His numerous writings upon health subjects include a volume of the Contemporary Science Series on public health problems, and various essays and reports.

The borough of St. Pancras, for which he was medical officer for 28 years, having been appointed in 1885 in succession to Sir Shirley Murphy, owes him a deep debt of gratitude for the interest which he took in all that concerned its health and well-being. He was one of the founders of the St. Pancras School for Mothers. Not only St. Pancras, however, but the whole metropolis is indebted to him for his untiring activity in the cause of the health of the people, and the science of hygiene generally has been the richer for his life.

He married Jane, the daughter of Mr. John Reynolds of Brighton, and leaves a son and a daughter.

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### WILLIAM CARTER, M.D. LOND., F.R.C.P. LOND., F.R.C.S. IREL., J.P.,

CONSULTING PHYSICIAN TO THE ROYAL SOUTHERN HOSPITAL, LIVERPOOL, ETC.

WE regret to announce the death of Dr. William Carter, the well-known Liverpool physician, which occurred at Prince's-avenue, Liverpool, on Sunday last, Feb. 2nd.

Dr. William Carter was born at Newbury, Berkshire, in 1836, and received his medical education at Charing Cross and St. Thomas's Hospitals in London, and also in Dublin. At the University of London he had a distinguished career, winning gold medals in physiology and comparative anatomy, and obtaining honours in materia medica, organic chemistry, in medicine, midwifery, and forensic medicine. He also obtained medals from the Society of Apothecaries in London in botany, materia medica, and pharmaceutical chemistry. He graduated in the University of London as M.B., B.Sc. in 1864, having previously taken what was then the recognised double qualification of M.R.C.S. Eng., L.S.A. He was appointed demonstrator of anatomy at Charing Cross Hospital, and after a brief stay in Dublin, in 1866 he went to Liverpool, where he remained in practice and enjoyed close association with the scientific and educational side of the city for 42 years.

His first introduction to educational work in Liverpool was his appointment to the lectureship on chemistry at the Liverpool College in Shaw-street, Liverpool, and from that time he was associated with the academic life in the city dating almost from the beginnings of the existing University of Liverpool. He was promptly appointed physician to the Liverpool Royal Southern Hospital and later to the Liverpool Eye and Ear Infirmary, while he was also for a period medical officer of health for West Derby. This sanitary appointment, which he held for some time, though the other professional claims on him were very heavy, gave him that insight into sanitation which made him so prominent a social reformer. Upon the foundation of the University of Liverpool he became professor of materia medica and therapeutics, a post which he held till 1908, when, on giving up his professional work, he was made Emeritus Professor. For 36 years he was honorary physician to the Royal Southern Hospital, his term of service being specially extended after he had reached the age of 60. In 1908, when he relinquished professional practice and decided to retire to Wales, a farewell banquet was given to him at which a portrait of himself painted in oils was presented to him by his friends and admirers.

In addition to the purely professional duties implied in what has been recorded, it must be mentioned that Dr. Carter was always in the forefront in public controversies upon medico-social subjects. His efforts in the promotion of total abstinence were very energetic in Liverpool; he was an acute critic of legislation for the notification of infectious disease, and the measure under which we at present live records his views rather than the wider objects first aimed at. He was an ardent advocate of the formation of medical defence unions; he spoke from the beginning, with a conviction which many of his colleagues and friends did not, and do not, share, of the benefits that would unfailingly follow on the registration of midwives; he was once engaged in starting a journal having for its object the reform of the Contagious Diseases Act; and he was a strong public champion of efficient vaccination.

With one *cause célèbre*, the famous Maybrick case, he was intimately associated, and the accuracy of his remarks upon the trial, which were published in THE LANCET shortly after the sentence had been given, was unchallenged, despite their dealing with highly controversial points. Dr. Carter gave his reasons in one sentence for believing that the symptoms displayed by the deceased had resulted from an irritant poison, most probably from arsenic.

The memory of Dr. Carter's strenuous career as physician and social reformer, which is indicated in these notes, will long remain in the city where his life work was done.

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## AUSTRALIA.

(FROM OUR OWN CORRESPONDENT.)

### *The Baby Bonus.*

DISSATISFACTION has been expressed in Parliament that members of the medical profession were in some instances charging a fee for filling up the certificate by which the baby bonus is claimed. The Bill provides that a medical certificate must state the child was viable, if there is any reason to doubt the fact. The Prime Minister said that for doctors to charge for these certificates was "unprofessional." The general practice has been not to make any specific charge for the certificate, but to raise the midwifery fee. On the other hand, many medical men contend there is a principle involved, and that raising the midwifery fee does not properly cover the charge for filling up a certificate. The Women's Hospital authorities now detain £3 of the £5 from their patients for a fortnight's treatment.

### *Lady Talbot Milk Institute.*

Some months ago the Victorian Government requested Dr. J. Johnston, of the Board of Public Health, to draw up a scheme by which a pure milk-supply for infants might be extended. He proposed that various municipalities should with assistance take over and extend the operations of the Talbot Institute. The municipalities have not responded except in a very few instances. The financial state of the Lady Talbot Milk Institute once more is such that Government aid is to be invoked.

### *Sydney Tuberculosis Dispensary.*

It is stated a report has been presented to the Chief Secretary giving information of the above institution. In the three months of its existence 250 patients are said to have been treated "with satisfactory results." A somewhat more startling allegation is that of 40 "contacts" who submitted themselves for examination, half of them were found to be suffering from consumption. These figures are apparently accepted by the dispensary officials, who point to them as sufficient justification for the existence of such work. But in some quarters they are doubted.

### *Friendly Societies in Victoria.*

The annual report of the Government statist of Victoria (Mr. A. M. Laughton) on Friendly Societies shows a steady increase in membership and funds. At the end of 1911 there were 48 societies, with 1498 branches, a total membership of 148,603, an annual income of £559,585, and funds representing in the aggregate £2,246,396. The funds per member worked out at £15 2*s.* 4*d.* The growth of the societies, both financial and numerical, has been especially marked during the last ten years. Between 1901 and 1911 the membership increased by 45,498, the annual income by £181,545, and the total funds by £875,792. At the close of 1911 there were in existence 11 female societies, having a membership of 11,056 and total funds of £32,321. Ten of these were associated with male societies. The membership of males at the end of 1881 was 49,431, out of a population of males of 16 years and upwards of 274,840. At the close of 1911, when the population had grown to 436,989, the male membership of friendly societies was 137,547. The ratios to population of annual income and total funds were greater in Victoria than in Great Britain, while the

funds per member in Victoria exceeded by almost 100 per cent. the proportionate funds held in Great Britain. The mortality prevailing among Victorian friendly society members has been shown by recent investigations to be much lower than that of the general community. This favourable feature is specially noticeable at the younger and middle ages. Returns have been furnished this year for the first time by juvenile societies. They show that at the end of 1911 the number of members of 35 branches of four societies who were entitled to benefits was 429, and the funds amounted to £1585. The following is a summary of membership, revenue, expenditure, and total funds during the triennial period 1909–10–11 :—

| | Membership. | Revenue. | Expenditure. | Funds. |
|---|---|---|---|---|
| 1909 | 136,340 | £523,871 | £399,345 | £2,012,417 |
| 1910 | 142,275 | 534,616 | 424,431 | 2,122,602 |
| 1911 | 148,603 | 559,585 | 435,791 | 2,246,396 |

Victoria has about 28 per cent. of the branches of the Friendly Societies of Australasia, 28 per cent. of the members, and almost 32 per cent. of the capital.

*West Australian University.*

The following professorial chairs in the West Australian University have been filled :—Biology, Mr. A. Willey, D.Sc., F.R.S. ; chemistry, Mr. N. S. Wilsmore, D.Sc. ; English, Mr. W. Murdoch, M.A. ; mathematics and physics, Mr. A. D. Ross, M.A., D.Sc. ; geology, Mr. W. G. Woolnough, D.Sc. ; mining and engineering, Mr. H. E. Whitfield, B.A., B.E.

*Immigration Medical Inspection.*

The Federal Government is contemplating the establishment of a medical inspector of emigrants to the Commonwealth to reside in London. The Melbourne *Argus* expressed some suspicion that this merely meant a hostile demonstration by the Labour Party against the policy of immigration being conducted by various States. Mr. J. Thomas (Minister for External Affairs) has made a statement in answer to this idea. He said :—

The suggestion is that a Commonwealth medical officer should be stationed in London, and it will be his duty to appoint in the various centres doctors who will be entitled to charge only a specified fee for examining anyone desirous of coming to Australia. That examination will take place in the town or village in which the prospective immigrant lives. A certificate issued by the local doctor will be sufficient to enable anyone to go on board a steamer. Besides that, I do not see any objection to a person who has a family doctor being examined by him, provided our representative is satisfied as to his credentials; and I am prepared to put that view before the medical man we appoint. On the same conditions, I am quite satisfied that the certificate of any well-known doctor in England will be accepted for the purpose of the Act. If, however, a family is examined by a private medical man, he will be at liberty to charge any fee, in contrast to the maximum which will be permitted under the new proposals. The idea is that doctors should be appointed in a very large number of centres, so that persons will be examined before they leave their homes. It will not be necessary then to run the risk of going even as far as London with the prospect of being turned back.

Then, again, as to the question of examining first-class as well as third-class passengers. It seems to me a necessity for the convenience of all other travellers, as well as for the welfare of Australia, that proper and searching examination should be made in every case. As to persons coming on board at wayside ports and enjoying the special advantage of being only examined by the ship's medical officer, there is really no cause for congratulation. The Bill says that the ship's officer must give a medical certificate for everyone on board, and the certificates must be handed in when the passengers are landing. This applies to everybody, whether they join at London or whether they join at a port *en route*. Great Britain has been specially named in this connexion for the reason that at present immigration is being specially drawn from there. Nearly all the oversea settlers now arriving in the Australian States are embarked at British ports. That will explain also why steps are not to be immediately taken to establish examination centres in other countries. It must be admitted that the passenger joining a steamer away from Great Britain has only to undergo one examination, whereas the British immigrant is required to submit to two—an examination before leaving his home, and another by the ship's doctor. The advantage is, however, really with the passenger from Great Britain, in that he runs much less risk of being sent back again after reaching his destination, than the man who has only been examined once. Those who do not carry the prescribed credentials are much more liable to be refused admission to the Commonwealth when the final searching examination is made here.

*Medical Rhodes Scholar.*

The Rhodes scholarship in Victoria for 1912 has been given to Mr. F. R. Kerr, who is a medical student in his fifth year.

*Melbourne City Health Officer.*

The city health officer's position, rendered vacant by the resignation of Dr. J. Jamieson, who has held it for 27 years, will be thrown open to application. There is some difference of opinion whether applicants outside Australia should be barred. The salary proposed is £750 per annum.

Jan. 2nd.

# Medical News.

THE HUNTERIAN SOCIETY DINNER.—The anniversary dinner of the Hunterian Society took place at De Keyser's Royal Hotel on Feb. 4th, the President, Mr. A. H. Tubby, being in the chair. A large number of ladies were present, and the function undoubtedly gained much in festivity from their presence, which removed some of the sense of heaviness that occasionally broods over such gatherings at the commencement. Dr. T. B. Hyslop gave the toast of "The Hunterian Society," which was responded to by the President, who referred to it as the second oldest medical society in London, having been founded in 1819, and as being largely a society of Guy's, St. Thomas's, and London men. He briefly reviewed the work of the Hunterian orators. Dr. W. Langdon Brown, in proposing "The Guests and Sister Societies," thought it a good thing that the amalgamation of societies in the Royal Society of Medicine had not entirely crowded out all the smaller societies. He pointed out that the Hunterian Society was not the second, but the third, oldest society in London, as the Abernethian Society intervened between it and the Medical Society. He referred in graceful terms to the work of Sir Francis H. Champneys, Sir W. Watson Cheyne, and Dr. Arthur Latham, whose names he coupled with the toast. Sir Watson Cheyne, replying for the Medical Society of London, referred humorously to the proposal of marriage that had been made a few years back but had been declined, and Sir Francis Champneys, as President of the Royal Society of Medicine, expressed his opinion that the Medical Society had done quite right in refusing the alliance, for certain of the smaller societies performed functions which they would lose by amalgamation. He looked forward to the time when the acknowledged function of the Royal Society of Medicine would be to express an authoritative opinion on all important subjects in medicine and surgery. Dr. Arthur Latham dwelt on the twofold advantages that accrued from learned societies—the increase of knowledge and the promotion of social intercourse. He said it was not sufficiently known that the amalgamation of societies into the Royal Society of Medicine had been largely due to Sir Richard Douglas Powell. Referring to medical research, he announced that the Government had agreed to give no less a sum than £60,000 for that purpose. Dr. W. J. M. Ettles, in proposing the toast of "The Orator and Officers," said that the duty of the orator was to draw lessons from the progress of medicine and surgery and see whether the profession was keeping to the ideals of Hunter. Dr. E. W. Goodall, the orator, replied. Dr. F. J. Smith, in proposing the health of "The President," mentioned that they had had an interview with the Chancellor in reference to the National Insurance Act, and expressed his pleasure in being able to announce that as a result they were going to get something very good out of him after all. The President replied. The dinner was excellent, and excellent music, vocal and instrumental, was provided by Miss Gladys van der Beeck, Mr. Leon Fartovsky, Miss Adelina Leon, Mrs. Fraser Henry, and Mr. Bernard Jellen.

REMARKABLE HEALTH RECORD AT PWLLHELI.—At the last meeting of the town council of the ancient borough of Pwllheli (whose municipal charter dates back to the days of the Black Prince) some remarkable figures were submitted by the borough surveyor with reference to the health of the town. During the month of December the death-rate was only 6·31 per 1000. There were no cases of infant mortality. During the year 1912 the death-rate was 9·45 per 1000, as compared with 13·3, the lowest record for England and Wales. The following comparative table was submitted :—

| | | |
|---|---|---|
| 1877–88 | Death-rate 21·7 per 1000. | |
| 1895–1904 | ,, | 18·8 ,, |
| 1905–12 | ,, | 17·05 ,, |
| 1912 | ,, | 9·45 ,, |

There was entire freedom from notifiable infectious diseases during 1912. The town has greatly increased in public favour as a health and pleasure (seaside) resort during recent years, and is establishing a reputation as a winter resort. Its health-giving properties are fully attested by the foregoing

figures, and the record is the more remarkable because a large proportion of the dwellings are very old and a high percentage of the population represents old people.

THE foundation-stone of a new large hospital has just been laid in Bell Ville, Argentina, by Dr. Ernesto Bosch, Minister of Education. The building will cost $2,000,000.

THE LATE DR. W. PAGE MAY.—On Jan. 25th the organ and tablet placed in the English Church at Helouan, Egypt, in memory of Dr. Page May, were dedicated at a special service. Lord Kitchener, as trustee of the church, unveiled the tablet, which is a very beautiful one of alabaster and marble.

A NEW APPOINTMENT AT THE SOUTH DEVON AND EAST CORNWALL HOSPITAL, PLYMOUTH.—The committee of the South Devon and East Cornwall Hospital recently decided to add the post of assistant physician to the list of appointments of the honorary medical staff of the institution, and as a result Dr. Colin Dunrod Lindsey has been elected to this new position.

TWELFTH CONGRESS OF THE GERMAN SOCIETY FOR ORTHOPÆDIC SURGERY.—This Congress will take place in Easter week, and the official date of opening is March 25th (the day before the meeting of the German Surgical Society), although a meeting for the display of lantern slides will be held on the previous evening at 8 P.M. The meetings will take place in the Langenbeckhaus, Ziegelstrasse, 10 and 11, Berlin. The President for 1913 is Professor Dr. H. Spitzy, of Graz (Glacisstrasse, 15). The chief subject chosen for consideration and discussion is the Treatment of Chronic Arthritis. On March 26th the members of the Congress will hold a joint session with the Section for Kinesitherapy of the Fourth International Congress for Physiotherapy. The principal subjects will be the Physical Treatment of Joint Disease and the treatment by exercise of Nervous Diseases. Communications with reference to this section should be made to Herr Professor Dr. G. Joachimsthal, Genthinerstrasse, 16, Berlin, W.

THE ASSOCIATION OF PUBLIC VACCINATORS OF ENGLAND AND WALES.—The annual dinner of this association was held at the Hotel Cecil, Strand, London, W.C., on Jan. 31st, Mr. Arthur Maude, the President, being in the chair. The occasion was marked by some exceptionally good speaking. Sir James Crichton-Browne and Surgeon-General G. J. H. Evatt, in replying for the guests, spoke in serious terms of the present position of vaccination in this country, owing to the popular ignorance of the real facts. Sir James Crichton-Browne frankly deplored the easy-going way in which the law allowed anyone on an ill-considered pretext to deprive the country of practical immunity from small-pox; while Surgeon-General Evatt insisted particularly upon the good that would ensue upon some regular system of popular education upon the whole subject of vaccination, supporting his words from his long experience both in the army and as President of the Poor-law Medical Association. Mr. Maude spoke in strong terms of the public apathy concerning vaccination and of the complete neglect of the scientific work to be done exhibited by the State. The Government, he said, did not help the important work of the Association of Public Vaccinators in any way. Their work, however, must be done, because what he might call the "red terror" was going to arrive some day. In Japan, Servia, Mexico, Russia, and Germany—indeed, all over the world—this was recognised, and the only place in ignorance was our own country. It was shameful that we should be the only people who did not prepare the nation for the "red terror." The unvaccinated people with us now amounted to some 50 per cent. of the population, and in many towns the proportion was worse. Isolation of cases as they arose might do a great deal in a limited outbreak, but the epidemic when it came would not be limited, and with a large proportion of our small-pox hospitals now allocated to other purposes we might find ourselves face to face with an overwhelming epidemic. Organisation and preparation against that time, which would come, was necessary. Mr. A. H. Martin, the retiring President, in proposing the health of the President, said that an outbreak of small-pox must sooner or later devastate this country, and a great responsibility rested upon the heads of Government departments. Vaccination exemptions had been allowed to go on throughout the land till they had increased in some places to something like 80 per cent. There were several other speakers, and the chairman briefly replied. The dinner was accompanied by a well-rendered musical programme.

THE council of the National Association for the Prevention of Consumption have elected Sir Robert W. Philip, M.D., as vice-chairman of the council, in succession to the late Dr. Theodore Williams.

# Parliamentary Intelligence.

## NOTES ON CURRENT TOPICS.

*Grants in Aid of National Health Insurance.*

SUPPLEMENTARY estimates just published give the details of the special grants in aid of National Health Insurance which the Government propose to vote before the end of the current financial year (March 31st, 1913). The total amount of the grants is £1,825,000. The details of the grants are as follows:—

| | |
|---|---|
| National Health Insurance Fund (England) ... ... ... | £1,380,000 |
| " " " " (Wales) ... ... ... | 101,000 |
| " " " " (Scotland) ... ... ... | 214,000 |
| " " " " (Ireland) ... ... ... | 50,000 |
| Special Drug Fund (Great Britain) ... ... ... ... ... | 30,000 |
| Mileage Fund (Great Britain, excluding the Highlands and Islands of Scotland) ... ... ... ... ... | 50,000 |
| Total ... ... ... ... ... ... ... ... ... | £1,825,000 |

The grants in aid made to the English, Welsh, and Scottish Insurance Funds will be applied by the several Commissions in grants by way of additional payments at a rate not exceeding 2*s.* 6*d.* for each insured person for the cost of medical attendance and treatment, and not exceeding 1½*d.* for each insured person for the cost of the administration of medical benefit. The Scottish grant in aid includes £10,000 for mileage and other special charges in the Highlands and Islands of Scotland.

The Irish grant in aid is to be applied towards the cost of medical certificates of sickness and other expenses of administration arising owing to the absence of medical benefit in Ireland.

Grants are to be made from the Special Drug Fund towards the cost of drugs where epidemics and other abnormal conditions have caused an excessive demand upon the funds available for this purpose. The Mileage Fund will provide special grants in respect of mileage in sparsely populated districts, exclusive of the Highlands and Islands of Scotland.

*The Medical Service in the Highlands and Islands of Scotland.*

Whilst a grant of £10,000 for mileage and other special charges to medical men in the Highlands and Islands of Scotland is included in the supplementary estimates, it is understood at Westminster that this is in no way intended by the Government to be a solution of the problem of medical service in that part of the country. It is stated unofficially that a sum of £32,000 will be included in the Scottish estimates next session to be expended on the organisation of the service. According to report the Scottish Local Government Board will have the administrative control of the money.

*Inflammable Flannelette.*

Mr. THEODORE TAYLOR'S Fabrics (Misdescription) Bill, which was introduced in the House of Commons on Tuesday, Feb. 4th, is designed to check the sale of inflammable flannelette which has caused so many deaths from burning. A standard of safety is set up to which fabrics sold under the description of safe must conform. The Bill has been read a first time.

*Mental Deficiency Legislation.*

An official denial has been given by the Prime Minister to the report that mental deficiency legislation will not be proceeded with next session.

*Ireland and Medical Benefit.*

The *personnel* of the Departmental Committee which has been appointed to inquire and report into the desirability of extending medical benefit to Ireland is not different from what has been expected at Westminster. It is anticipated that it will carry out its investigations with little delay, and if it reports in favour of an extension of medical benefits to Ireland legislation may be introduced by the Government in the coming session to give effect to its recommendations. The intention of the Committee is to deal first with the urban areas in Ireland, and it is announced that it will take evidence in Belfast and Dublin this month. Two or three months may elapse before the evidence as to the rural districts will be heard.

*Tuberculosis Prevention (Ireland) Bill.*

The Tuberculosis Prevention (Ireland) Bill has received a second reading in the House of Commons.

## HOUSE OF COMMONS.

WEDNESDAY, JAN. 29TH.

*Grievances regarding Medical Benefit.*

Mr. F. HALL (Dulwich) asked the Chancellor of the Exchequer whether, in view of the misapprehension as to the Government's intentions with regard to free choice of doctors by insured persons, he would, in order to prevent a similar misunderstanding in future, give some kind of official form to the pledge given by him on Jan. 2nd to deal with any grievances which might arise as regards the working of medical benefit.—Mr. LLOYD GEORGE said in reply: The answer is in the negative.

*Independent Arrangements under the National Insurance Act.*

Mr. RUPERT GWYNNE asked the Secretary to the Treasury whether Local Insurance Committees were entitled to fix a limit of five days in which insured persons desirous of making their own arrangements for medical benefit had to apply for the form, thus excluding a large number of persons who had not received the medical benefit ticket, which in certain cases it had been stated must be brought when application was made, from availing themselves of the provisions of Section 16 (3) of the Act.—Mr. MASTERMAN answered: I am not aware of any case in which such a time limit has been fixed. If the honourable Member has any case in mind and will supply me with particulars I shall make inquiries.

Mr. GWYNNE: I shall send the right honourable gentleman particulars.

*Allotment of Insured Persons.*

Mr. RUPERT GWYNNE asked the Secretary to the Treasury to state which, if any, Insurance Committees had permitted doctors to join the panel and limit, by their agreements, the number of insured persons to be treated by them to those whom they agreed to treat without having others assigned to them.—Mr. MASTERMAN replied: The conditions under which insured persons in each area may be allotted to the medical men on the panel are laid down in Section 15 (2) (d) of the National Insurance Act and the Regulations of the Commissioners. It is within the discretion of the Insurance Committee subject to those conditions to make such arrangements as will limit the number of insured persons for whose treatment any particular doctor will be responsible. I am not aware which Insurance Committees have made arrangements with medical men on the panel granting such limitations.

Mr. GWYNNE: Will the right honourable gentleman inquire whether any Insurance Committees have made these arrangements? Will he also notify Insurance Committees that they may act in this way?—Mr. MASTERMAN: I think my answer will be quite sufficient notification. I have no knowledge that they are in ignorance on the subject.

*Appointments under the National Insurance Act.*

Mr. WORTHINGTON EVANS asked the Secretary to the Treasury to state where Messrs. Morgan and Dimock practised as doctors prior to their appointment under the National Insurance Act.—Mr. MASTERMAN said in reply: Dr. Morgan practised in London. Dr. Dimock has held important hospital appointments in London and the provinces.

Mr. WORTHINGTON EVANS: Has either of these medical men practised in the district in which he now resides?—Mr. MASTERMAN: In the districts in which they have now taken up residence? I do not think either of them has.

*The Panel in the Isle of Ely.*

Mr. WORTHINGTON EVANS asked the Secretary to the Treasury to state (1) upon what terms Messrs. Morgan and Dimock had been engaged as doctors for the purpose of the National Insurance Act to work in the Isle of Ely; and whether they had been assured that they should have a monopoly of practice among insured persons in that district; and (2) whether the Insurance Committee having jurisdiction in the Isle of Ely had allowed insured persons to make their own arrangements with doctors not on the panel in that district, or was the right of free choice of doctor limited to Messrs. Morgan and Dimock.—Mr. MASTERMAN replied: The Insurance Commissioners, upon the application of the Isle of Ely Insurance Committee, and after inquiry, have satisfied themselves that the number of medical men on the list in two districts was not such as to secure an adequate medical service, and have therefore authorised the Committee to make special arrangements for the attendance of insured persons in these districts. Under these arrangements one doctor in Chatteris and three in Wisbech have undertaken complete responsibility for all the insured persons in these districts.

Mr. WORTHINGTON EVANS: Has the panel system been superseded in this district? If so, was it by the Insurance Committee or by the Insurance Commissioners?—Mr. MASTERMAN: The ordinary system—the list system, if I may so describe it—under Section 15 of the Act has been suspended, and a scheme suggested by the Insurance Committee has been accepted by the Commissioners.

Mr. WORTHINGTON EVANS: Has the panel been closed? If so, for how long? Is it true that it is closed for two years?—Mr. MASTERMAN: I cannot tell for how long the special arrangements are entered into.

*Publication of Panel Lists.*

Lord NINIAN CRICHTON-STUART asked the Secretary to the Treasury whether, in the interests of insured persons, he would arrange that the names of all doctors willing to serve on the panels should be placed on the public lists immediately on receipt of the knowledge of their willingness to serve.—Mr. MASTERMAN answered: Names of additional doctors joining the panels are kept at the offices of the Insurance Committees. Revised lists are published by the Insurance Committees at convenient intervals, but it would not be practicable for each committee to print and distribute a new list upon the receipt of each additional name.

Lord NINIAN CRICHTON-STUART: Would it not be possible, without much trouble, to put the names of the additional doctors down in handwriting?—Mr. MASTERMAN: The list goes round to many hundreds of places, and it would be difficult to arrange that.

*Numbers of Insured Persons.*

Answering Mr. F. HALL (Dulwich), Mr. MASTERMAN said: The approximate numbers of members of Approved Societies and of Deposit contributors are 13½ millions and 480,000 respectively. The numbers of men and women are about 10 millions and 3½ millions respectively.

*Naval Hospital Accommodation at Harwich.*

Captain CLIVE asked the Secretary to the Admiralty (1) whether the temporary naval hospital accommodation at Harwich, which had been admitted to be unsuitable, was now closed; and (2) whether two cases of enteric fever in the fleet at Harwich had recently had to be sent to Chatham owing to insufficient hospital accommodation on the spot; and whether a beginning had been made of making good this deficiency.—Mr. MACNAMARA replied: Harwich is one of those places on the East Coast which have only in recent years acquired a naval importance. The following arrangements are made for the treatment of sickness amongst the increasing number of sailors stationed there. All ordinary cases occurring in the flotillas are taken on board the parent ships, where there is the usual service accommodation for sick, and are transferred to Chatham Naval Hospital at convenient opportunities. Urgent and serious cases are accommodated at Shotley, opposite to Harwich and half a mile away, where there is a well-appointed naval hospital belonging to the Shotley training establishment. In ordinary times there is room in this hospital for treating such naval cases, but if there were to be an unusual amount of sickness among the boys at Shotley difficulties in providing accommodation might arise. The First Lord of the Admiralty is therefore making provision in the forthcoming Estimates for certain extensions at Shotley Hospital which will effectually provide against such a contingency. My right honourable friend is not prepared, as at present advised, to ask Parliament to build a separate naval hospital on the Harwich side of the water, as that would involve duplication of services and heavy expenditure. A case of enteric fever was recently sent from Harwich to Chatham for treatment, because the patient himself elected to be sent to Chatham Hospital, and his condition at the time is said to have warranted that course.

*Medical Inspection of School Children.*

Captain CLIVE asked the Parliamentary Secretary to the Board of Education whether he was aware that not only did local authorities have to pay the whole cost of the medical inspection of school children, but if, on the advice of the medical officer, they excluded children from school or compelled their attendance at centres for remedial treatment they suffered a further loss of grants owing to their absence; and whether he proposed, by legislation or otherwise, to remove this burden from the ratepayers.—Mr. TREVELYAN said in reply: The answer to the first part of the question is in the affirmative. The President of the Board of Education has received no evidence to show that the reduction of grant due to exclusion of children from school for the reasons mentioned in the question has, in fact, been substantial. He is considering how far it is possible to effect a reconstruction of the system of grants, but he is not in a position to make any statement on the matter.

*Water-supplies in Rural Kent.*

Mr. CHARLES BATHURST asked the Parliamentary Secretary to the Local Government Board whether his attention had been called to the inadequate provision of water-supplies in the rural districts of Kent, and whether he had any official information as to the number of rural parishes depending wholly or in part on open ponds for their supply of drinking-water.—Mr. HERBERT LEWIS answered: My attention has been called to deficiency of water-supply in a few localities in rural districts in Kent, and in several cases I am in communication with the local authority. With regard to the last part of the question, I hope shortly to be in a position to publish a return of the sources of water-supply in the various districts.

*Milk and Dairies Legislation in Scotland.*

Mr. CHARLES BATHURST asked the Secretary for Scotland whether it was proposed to introduce next session a Milk and Dairies Bill for the prevention of the production and sale of diseased and dirty milk in Scotland on the same lines as that recently introduced and applicable to England and Wales and the similar Bill already promised for Ireland.—Mr. MCKINNON WOOD said in reply: A Milk and Dairies Bill was introduced in another place by my predecessor in 1909, and was passed through committee and report stages. I cannot at this time pledge the Government as to next session's legislation, but there is every intention of introducing a Scottish Bill at the earliest practicable date.

*Housing in South Dublin Rural District.*

Mr. CLANCY asked the Chief Secretary to the Lord Lieutenant of Ireland whether his attention had been drawn to a resolution passed by the South Dublin rural district council with reference to the housing of the labourers in certain portions of that district—namely, Palmerston, Crumlin, Rathfarnham, and Clondalkin; whether many houses in those places were overcrowded and were, in consequence, a menace to the health of the inhabitants of the localities generally and had been so described by the medical officers of health; if so, whether that circumstance had been taken into account by the Local Government Board for Ireland in refusing to hold immediately an inquiry into the scheme for the provision of additional dwellings formulated by the district council; and whether, if the entire scheme appeared to the Local Government Board to be too large to be inquired into at once with a view to immediate action, so much at least of it as proposed the replacement of insanitary dwellings by new cottages would be immediately considered.—Mr. BIRRELL wrote in reply: My attention has been called to the resolution referred to, and the council have been informed that, in view of the fact that 476 cottages have already been provided in the South Dublin rural district, and having regard to the limited fund provided by the Act of 1911, the Local Government Board are unable at present to direct an inquiry into any portion of the council's scheme. In order to secure an equitable allocation of the additional million provided by the Labourers Act of 1911 due regard must be had to the extent to which the Labourers Acts have already been put into operation in the different rural districts the councils of which are applying for authority to provide additional cottages. The order, therefore, in which inquiries will be held into schemes lodged with the Board will not be regulated by the dates of lodgment but by the necessities of the different districts for housing accommodation, taking into account the number of labourers' cottages already provided in each district and the total number of agricultural labourers in the district.

THURSDAY, JAN. 30TH.

*Payments to Panel Practitioners.*

Mr. CASSEL asked the Secretary to the Treasury to state at what periods payments would be made to doctors on the panels who were

remunerated on the capitation system, and when would the first payments be made; whether the lists of patients furnished by doctors would be accepted as sufficient for the purpose of payment, or whether it would be necessary to produce the patients' tickets; and whether remuneration would commence to run from Jan. 15th, 1913, or the date when the doctor accepted an insured person as his patient, and how would such date be ascertained.—Mr. MASTERMAN replied: The Regulations contemplate quarterly payments, but, as I have previously stated, arrangements may be made by Insurance Committees whereby payments may be made on account during the quarter. The lists of patients sent in by the doctors will be checked by the Insurance Committees from the lists furnished by the societies, not from the medical tickets. The payments are due as from Jan. 15th or whatever later date the doctor joined the panel.

*The Extent of Sanatorium Benefit.*

In reply to a question put by Mr. CASSEL asking in respect of an individual case of sanatorium benefit in London what articles the insured person was entitled to receive as part of domiciliary treatment, Mr. MASTERMAN said that the Insurance Committee were empowered to authorise the supply of articles which were ordered by the doctor and were ancillary to the treatment, but had no legal power to supply articles not falling within this description.

Mr. CASSEL: Is it to be taken as a rule when the doctor orders ancillary treatment in the case of tuberculosis that the things are not to be supplied?—Mr. MASTERMAN: No, only the articles which can be legally supplied under the Act which rules the ancillary treatment of tuberculosis. The Act is not an Act for giving general relief to poor people.

Mr. CASSEL: Is it a fact that these articles are confined to cod-liver oil and extract of malt?—Mr. MASTERMAN: No, a cheque for a considerable sum, I think nearly £10, was paid over in this case for other articles which were for ancillary treatment, but the Insurance Committee have no power to supply coal or bread or meat.

Mr. CASSEL: Is the right honourable gentleman aware that the information given by the doctor in charge of the case is that the articles he ordered were not coal, but supplementary diet, the daily visits of a nurse, and proper bedding?—Mr. MASTERMAN: These were the articles supplied.

Mr. CASSEL: Is it not the case that these articles were only supplied after such delay as to cause grave and serious injury to the patient?—Mr. MASTERMAN: No, I have answered that already. That is not so.

*Dispensing Medicines under the National Insurance Act.*

Mr. MASTERMAN (replying to Mr. O'GRADY) said: No persons qualified to dispense medicines prior to the passing of the National Insurance Act have been disqualified from dispensing medicines by that Act. The Insurance Commissioners have no power to vary the conditions laid down in Section 15 (5) of the Act as to the supply of medicines to insured persons.

Mr. O'GRADY: Is it not a fact that there are a large number of chemists in this country who are qualified, although they are not members of the Pharmaceutical Society, and have been in the habit of dispensing medicines for doctors for a period of years, and is it not a fact that the Act specifically relates to those men when it speaks of having to get a certificate from a doctor to dispense?—Mr. MASTERMAN: I am not sure, but it only follows the limitation laid down in the Pharmacy Act.

Mr. O'GRADY: Does that mean that the Act constitutes a monopoly for the members of the Pharmaceutical Society to the exclusion of other skilled men?—Mr. MASTERMAN: The Pharmacy Act lays down certain qualifications for chemists, and those are embodied in the National Insurance Act.

Mr. O'GRADY: Can these chemists be placed on the panel of dispensers for things not down in the schedule of poisons?—Mr. MASTERMAN: I am not sure of that.

Mr. O'GRADY asked the right honourable gentleman whether he was aware of the fact that in the east municipal ward of East Leeds there are 6463 persons on the electoral register, and that for the larger population in the locality which this number represented there was only one chemist's shop at which medicines might be dispensed under the National Insurance Act; and whether, in view of the hardship that this imposed on poor people, as well as the danger to life in having to come from the opposite end of the municipal division to obtain medicines, the unregistered but qualified chemists in business in the neighbourhood should be given the right to dispense under the Act.—Mr. MASTERMAN said in reply: I have communicated with the Leeds Insurance Committee, and they are making inquiries as to the adequacy of the number of chemists in the district referred to. I may, however, point out that in any case it would not be possible to authorise the supply of medicines requiring dispensing to be arranged by other persons than those entitled to make these arrangements under the Act.

Mr. O'GRADY asked the right honourable gentleman whether he was aware of the fact that the prescriptions made out on paper by the doctor and given to a patient to be dispensed at the store of a chemist who was on the panel as a dispenser under the National Insurance Act many times contained a list of medical appliances; whether he was aware that this meant that the sale of these appliances in the majority of cases was bound to go to such chemists to the loss of business of those chemists and drug store proprietors who could only be on the panels for the supply of medical appliances; and whether, having regard to the fact that a monopoly of dispensing had been created for the M.P.S. chemist under the Act and that a monopoly was also developing in respect to the supply of medical appliances, steps would be taken to alter this state of things.—Mr. MASTERMAN answered: The National Insurance Act gives the insured person a free choice as to the chemists or other persons on the lists from whom he can obtain appliances, and I could not take any action which would have the effect of depriving the insured person of that choice.

*Medical Inspection of Elementary School Children.*

Mr. ROWNTREE asked the President of the Board of Education whether, as a result of the medical inspection in the elementary schools of England and Wales during recent years, it was possible to estimate the number of children attending these schools who were suffering from the following defects, and the approximate percentage of the whole which these numbers represent: defective vision, defective hearing, ear disease, adenoids and enlarged tonsils, injurious decay of teeth, unclean bodies, ringworm, tuberculosis, heart disease, and malnutrition.—Mr. J. A. PEASE replied: The latest estimate is to be found in Paragraph 314 on p. 256 of the report for 1910 of the Board's chief medical officer. I cannot assert that there is as yet any improvement in the condition of the entrants into the schools, but we believe that substantial progress is being made in the case of children who have already come under inspection.

*Medical Institutions and the National Insurance Act.*

Mr. DUNCAN MILLAR asked the Secretary to the Treasury in how many instances existing medical institutions or associations had been approved under Section 15 (4) of the National Insurance Act; and in how many cases medical treatment was provided by the rules of such associations for dependents as well as for insured persons.—Mr. MASTERMAN furnished the following written answer: 109 systems and institutions have been approved. With one exception the rules provide for the treatment of dependents.

*District Nursing under the National Insurance Act.*

In reply to Sir A. WILLIAMSON, Mr. MASTERMAN wrote: The Insurance Commissioners have no funds from which to make any grant for the support of district nurses. Under Section 21 of the Act, an Approved Society or an Insurance Committee may subscribe for this purpose, and experience of the working of the Act is necessary to show what will be the effect of this provision.

MONDAY, FEB. 3RD.

*Old Members of Friendly Societies.*

Lord NINIAN CRICHTON-STUART asked the Secretary to the Treasury whether the Government were prepared to help, financially or otherwise, those members of Friendly Societies over 65 years of age who were insured persons, and therefore eligible for sickness benefit, to get medical benefit.—Mr. MASTERMAN replied: Yes. The supplementary estimates laid on the table of the House on Friday include provision for a capitation grant of 2*s.* 6*d.* in respect of those insured persons whose societies elect to provide medical treatment as one of the benefits to be given under Section 49 of the Act.

In reply to Mr. RUPERT GWYNNE, Mr. MASTERMAN said: The National Insurance Commissioners are preparing and will issue this week a table for the guidance of societies in determining the benefit which may be given to members of societies over 65 on July 15 last, which decide to give medical attendance and treatment for such members as one of the benefits to be given under Section 49 of the Act.

*Medical Benefit in Chatteris and Wisbech.*

Mr. WORTHINGTON EVANS asked the Secretary to the Treasury how many insured persons lived in the districts of Chatteris and Wisbech under the jurisdiction of the Isle of Ely Insurance Committee, for whom four doctors had undertaken complete responsibility; and whether in these districts the four doctors were allowed to dispense.—Mr. MASTERMAN answered: The number of insured persons living in the urban district of Wisbech is estimated at 3607 and in the urban district of Chatteris at 1753. The answer to the second part of the question is in the negative.

*The Insurance Committee of the Isle of Ely.*

Mr. WORTHINGTON EVANS asked the Secretary to the Treasury whether insured persons were allowed to make their own arrangements under Section 15 (3) of the National Insurance Act by the Insurance Committee of the Isle of Ely; and what limits of time within which applications for permission to make private arrangements could be made have been fixed by such committee.—Mr. MASTERMAN replied: The Isle of Ely Insurance Committee will exercise the powers conferred on them by Section 15 (3) of the National Insurance Act in the same way as other Insurance Committees, except in the areas in which the panel system has been suspended. In those areas all the sums available for the medical treatment of insured persons will be paid by the Committee to the doctors who had undertaken complete responsibility for their treatment. I am not aware that any limits of time such as are referred to in the second part of the question have been fixed by the committee.

Mr. WORTHINGTON EVANS asked the right honourable gentleman to state on what terms Messrs. Morgan and Dimock had been engaged as doctors for the Isle of Ely under the National Insurance Act; and whether any assurance had been given to them that the panel would be closed or not adopted for two years or any other period, and by whom such assurance was given.—Mr. MASTERMAN said in reply: Dr. Morgan only rendered service pending the completion of the committee's arrangements for medical service in the Chatteris district. Dr. Dimock and the other doctors who have undertaken the attendance and treatment of insured patients in the Chatteris and Wisbech districts will be remunerated on the same terms as panel doctors elsewhere, and they have entered into agreement with the Local Insurance Committee to take complete responsibility for the insured persons in those districts for a period of two years, subject to three months' notice on either side.

Mr. WORTHINGTON EVANS asked the right honourable gentleman to state the names of the four doctors appointed by the Isle of Ely Insurance Committee by special arrangement to undertake complete responsibility for insured persons in the districts of Chatteris and Wisbech, and whether he could state which of the four was assigned to Chatteris district, and the area of such district and of the Wisbech district, and which, if any, of these doctors had previously practised in either of these districts.—Mr. MASTERMAN wrote in reply: The names of the four doctors in question are William Groom, M.D., Harry Groom, M.D., Horace Dimock, M.B., M.R.C.S., L.R.C.P., and P. Coffey, L.R.C.S., L.R.C.P. The three doctors whose names are first mentioned are treating insured persons in the borough of Wisbech, and Dr. Coffey is undertaking the same work in the urban district of Chatteris. Dr. William Groom and Dr. Harry Groom have both practised in the Wisbech area.

*The Income Limit in Perth.*

Mr. CHARLES DUNCAN asked the Secretary to the Treasury whether he was aware that the Perth Burgh Insurance Committee had fixed a £2 limit for medical benefit under the National Insurance Act on the ground that a panel of doctors could not otherwise have been set up; whether this action, which was causing dissatisfaction amongst insured persons in Perth, was in order; and what action he proposed to take in the matter.—Mr. MASTERMAN answered: Under Section 15 (3) of the Act the question of whether an income limit above which persons must make their own arrangements for receiving medical attendance and treatment and receive a contribution towards its cost, instead of

receiving medical benefit under the ordinary arrangements, is one to be determined by the Insurance Committee. Paragraph 14 (2) of the Medical Benefit Regulations requires that before such an income limit is fixed the committee shall give public notice of their intention and shall consider the representations of any societies with members resident in the area. I am informed that the Perth Insurance Committee had given public notice accordingly, and a meeting will be held at which representatives of societies will have an opportunity of expressing their views before a final decision is arrived at.

TUESDAY, FEB. 4TH.

*Ireland and Medical Benefit.*

Mr. J. REDMOND asked the Chancellor of the Exchequer whether he was in a position to make any announcement with reference to the promise to appoint a Committee of Inquiry into the question of granting medical benefits under the Insurance Act to Ireland.—Mr. LLOYD GEORGE replied: The Committee, which has been appointed to-day, consists of Lord Ashby St. Ledgers as chairman; Mr. Hugh T. Barrie, Mr. Joseph Devlin, and Mr. J. C. R. Lardner, Members of this House; Mr. J. Bradbury, of the Treasury; Mr. T. J. Stafford, medical member of the Local Government Board for Ireland; Mr. G. A. Glynn and Dr. W. J. Maguire, chairman and medical member respectively of the National Health Insurance Commission for Ireland; and Mr. W. L. Hicks, a member of the Congested Districts Board for Ireland. The terms of reference are as follows:—"To consider and report as to the advisability of applying to Ireland the provisions of the National Insurance Act, 1911, with respect to medical benefit and as to the alterations, legislative and otherwise, which in the event of such provisions being applied would be desirable in the systems for affording medical relief at present existing."

Mr. BOOTH: Do I understand that this Committee will simply have to report whether the medical benefit system in operation in England should be applied to Ireland, or have they the power to suggest some alternative system which they may think better?—Mr. LLOYD GEORGE: They have to consider Irish conditions, which are very different from ours. It is not for me to express an opinion as to whether the system obtaining in England shall apply to Ireland. They will have to adapt it in some way to the conditions existing there.

*Rural Medical Men and the National Insurance Act.*

In answer to Mr. WRIGHT, Mr. MASTERMAN said: A doctor in a rural district who does his own dispensing under the conditions laid down in Sections 45 and 47 of the Medical Benefit Regulations will receive on the capitation system the total capitation sum for medical treatment and drugs—namely, 7*s.* (which includes the so-called floating 6*d.*) for general attendance, 6*d.* for attendance on tuberculosis patients, and 1*s.* 6*d.* for drugs, making a total of 9*s.* in all.

*Sanatorium Benefit.*

Replying to Mr. WHELER, Mr. MASTERMAN said: An insured person is entitled to such sanatorium benefit as the Insurance Committee recommends. The nature of the treatment is determined by the committee acting on the advice of the tuberculosis officer or other consulting medical man.

*Medical Representation on Insurance Committees.*

Mr. MASTERMAN, in reply to Mr. COOPER, said: The Insurance Commissioners are arranging for the election at the earliest possible date of direct representatives of the medical profession on the various Insurance Committees, and also for the appointment of medical members of the committees by the county and county borough councils and by the Commissioners themselves. Circulars have already been issued to the county and county boroughs with regard to the appointment of medical representatives by these bodies, and the Commissioners have issued regulations for the election of doctors by the resident medical practitioners in each area.

*Panel Medical Men and Professional Secrecy.*

Sir HENRY CRAIK asked the Secretary to the Treasury whether, considering that it was a breach of medical etiquette for doctors to divulge the ailments of their patients, and that patients often objected to any specific statement in regard to this being made public, it was sufficient to enter on the sickness certificate that the insured person was disabled by illness or accident, as the case might be, leaving any specific statement which might be required for statistical purposes to be entered in the doctor's private day book.—Mr. MASTERMAN replied: The arrangements for keeping and furnishing the records by doctors secure that information that would connect the name of a patient with an entry as to a particular kind of disease, could not be obtained by the Commissioners, committee, or society. The nature of the evidence which a society accepts in support of a claim to sickness benefit (which has no connexion with the form of record kept by the doctor for the purposes of the Medical Benefit Regulations) is primarily a matter for the society. If any question arises between such a claimant and his society as to the sufficiency of any certificate tendered by the claimant for this purpose, that question will have to be determined by the Commissioners under Section 67 of the Act.

*Milk Legislation in Scotland.*

Mr. CHARLES BATHURST asked the Secretary for Scotland whether he realised that after the passing next session of the Milk and Dairies Bill, which applied only to England and Wales, and in the absence of any similar measure applicable to Scotland, there would be a serious risk of tuberculous cattle being sold into Scotland to avoid their slaughter in England and prove a source of disease to those supplied with milk from Scottish dairies; and whether, to avoid such risk, he would, on behalf of the Scottish Board of Agriculture, consent to the English Bill being made applicable to Scotland or, alternatively, introduce a Bill next session containing the same or similar provisions.—Mr. MCKINNON WOOD answered: I hope to take steps to avoid the risks to which the honourable Member refers.

WEDNESDAY, FEB. 5TH.

*Suggested Amendment of the Insurance Act.*

Replying to Mr. GODFREY LOCKER-LAMPSON, Mr. MASTERMAN said: If and when experience shows that amendments of any details of the Insurance Act are desirable, legislation embodying such amendments will undoubtedly be introduced. The Commissioners will be glad to receive at any time and from any quarter any suggestions for possible improvement. Criticism up to the present, however, has been singularly barren in constructive suggestions.

# Appointments.

*Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

EDWARD, J. R., M.D. Edin., has been appointed Chief Tuberculosis Officer for Nottingham.

HART, BERNARD, M.D. Lond., has been appointed Physician in Charge of the Out-patient Department for Mental Diseases at University College Hospital.

HENDERSON, A. A., M.R.C.S., L.R.C.P. Lond., has been appointed Casualty Surgical Officer at University College Hospital.

HILEY, R. MELVILLE, M.R.C.S., L.R.C.P. Lond., has been appointed Tuberculosis Physician to Pontypridd and the Rhondda Valleys under the Welsh National Memorial.

HORTON, R. L., M.R.C.S., L.R.C.P. Lond., has been appointed House Surgeon at University College Hospital.

HUDSON, E. P., L.D.S. Eng., has been appointed Dental Surgeon to St. Marylebone Home for Incurables.

MAXWELL-ADAMS, D. V., M.B., B.Ch. Edin., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Lanark District of the county of Lanark.

MAYNE, NATHANIEL, L.R.C.P. & S. Irel., has been appointed one of the Medical Referees under the Workmen's Compensation Act, 1906, to act for the County of Longford.

TAYLOR, J., M.B., B.S., M.R.C.S., L.R.C.P. Lond., has been appointed House Physician at University College Hospital.

WILLIAMSON, OLIVER K., M.D. Cantab., F.R.C.P. Lond., has been appointed Fourth Assistant Physician to the Westminster Hospital.

# Vacancies.

*For further information regarding each vacancy reference should be made to the advertisement (see Index).*

AGRA, DUFFERIN HOSPITALS.—Female Doctor. Salary Rs.300 a month, with free quarters.

AYLESBURY, BUCKS COUNTY LUNATIC ASYLUM, Stone.—Assistant Medical Officer, unmarried. Salary £200 per annum, with board and apartments.

BARNSTAPLE UNION.—Medical Gentleman to undertake Care of Sick Poor for Parishes of Bittadon, Ilfracombe, and West Down. Salary £80 per annum.

BARROW-IN-FURNESS, NORTH LONSDALE HOSPITAL.—Resident House Surgeon. Salary £100 per annum, with board and residence.

BATH, EASTERN DISPENSARY.—Resident Medical Officer. Salary £130 per annum, with rooms, coal, gas, and attendance.

BEDFORD COUNTY HOSPITAL.—Assistant House Surgeon. Salary £80 per annum, with board, lodging, and laundry.

BIRMINGHAM AND MIDLAND EYE HOSPITAL.—Third House Surgeon. Salary £75 per annum, with board, rooms, and laundry allowance.

BIRKENHEAD UNION INFIRMARY.—Senior Assistant Resident Medical Officer. Salary £120 per annum, with board, washing, and apartments.

BOOTLE BOROUGH HOSPITALS FOR INFECTIOUS DISEASES.—Resident Medical Officer for Linacre Hospital, unmarried. Salary £120 per annum, with board, washing, and apartments.

BRADFORD POOR-LAW UNION HOSPITAL AND WORKHOUSE.—Assistant Resident Medical Officer, unmarried. Salary £130 per annum, with rations, apartments, and laundry.

BRENTFORD UNION INFIRMARY, WORKHOUSE, AND SCHOOLS.—Second Assistant to Medical Superintendent. Salary £150 per annum, with apartments, rations, &c.

BRISTOL ROYAL INFIRMARY.—Resident Casualty Officer. Salary at rate of £50 per annum, with board, apartments, and laundry. Also Dental House Surgeon. Salary £100 per annum, with board, apartments, and laundry. Also House Physician. Salary £100 per annum, with board, apartments, and laundry. Also Obstetric and Ophthalmic House Surgeon. Salary £75 per annum, with board, apartments, and laundry. Also Honorary Surgeon, and, if necessary, Honorary Assistant Surgeon.

BURY INFIRMARY.—Senior House Surgeon. Salary £110 per annum, with board, residence, and washing. Also Junior House Surgeon. Salary £80 per annum, with board, residence, and washing.

CAMBRIDGE, ADDENBROOKE'S HOSPITAL.—Second House Surgeon. Salary £80 per annum, with board, residence, and laundry.

CARDIFF, KING EDWARD VII.'s HOSPITAL.—House Surgeon for six months. Salary at rate of £60 per annum, with board, residence, and laundry.

CARLISLE NON-PROVIDENT DISPENSARY.—Resident Medical Officer. Salary £150 per annum, with apartments.

CHELSEA INFIRMARY, Cale-street, S.W.—Second Assistant Medical Officer. Salary £120 per annum, with board, washing, apartments, &c.

COLCHESTER, ESSEX COUNTY HOSPITAL.—House Physician. Salary £80 per annum, with board, residence, and washing.

DAVOS PLATZ, SWITZERLAND, QUEEN ALEXANDRA SANATORIUM.—Resident Assistant Medical Officer, unmarried. Salary £100 per annum, with board, residence, and washing.

DENBIGH, NORTH WALES COUNTIES ASYLUM.—Junior Assistant Medical Officer, unmarried. Salary £160 per annum, with apartments, board, attendance, and laundry.

EAST LONDON HOSPITAL FOR CHILDREN, Shadwell, E.—Clinical Assistant.

EDMONTON UNION.—District Medical Officer and Public Vaccinator, Hornsey District. Salary £60 per annum.

ESSEX EDUCATION COMMITTEE.—School Medical Inspector. Salary £250 per annum.

EXMINSTER, DEVON COUNTY ASYLUM.—Fourth Assistant Medical Officer. Salary £130, with £50 per annum for Pathological Work.

FIJI, LEPER ASYLUM, Makogai Island.—Assistant Medical Officer. Salary £400 per annum, with quarters.

GELLYGAER URBAN DISTRICT COUNCIL.—Medical Officer of Health, &c. Salary at rate of £400 per annum.

GLOUCESTER, GLOUCESTERSHIRE ROYAL INFIRMARY AND EYE INSTITUTION.—Assistant House Surgeon for six months. Salary at rate of £80 per annum, with board, residence, and washing.

GUILDFORD, ROYAL SURREY COUNTY HOSPITAL.—House Surgeon. Salary £75 per annum, with board, residence, and laundry.

HELLINGLY, EAST SUSSEX COUNTY ASYLUM.—Third Assistant Medical Officer, unmarried. Salary £175 per annum, with board, apartments, washing, and attendance.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton.—Physician. Also Assistant Physician.

KING EDWARD VII. SANATORIUM, Midhurst, Sussex.—Second Assistant Medical Officer, unmarried. Salary £150 per annum, with board, lodging, and attendance.

LANCASHIRE EDUCATION COMMITTEE.—School Medical Inspector. Salary £250 per annum.

LEEDS, CITY OF.—Assistant Medical Officer of Health and Chief Inspector of Nuisances. Salary £300 per annum.

LEICESTERSHIRE AND RUTLAND ASYLUM, Narborough.—Junior Assistant Medical Officer, unmarried. Salary £150 per annum, with board, residence, and laundry.

LIVERPOOL HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Mount Pleasant, Liverpool.—Honorary Assistant Physician.

LIVERPOOL INFIRMARY FOR CHILDREN.—Resident House Surgeon. Salary at rate of £60 per annum, with board and lodging.

MACCLESFIELD GENERAL INFIRMARY.—Junior House Surgeon. Salary £80 per annum, with board and residence.

MANCHESTER HOSPITAL FOR CONSUMPTION AND DISEASES OF THE THROAT AND CHEST.—Assistant Medical Officer for Crossley Sanatorium, Delamere Forest, Cheshire. Salary £100 per annum, with board, apartments, and laundry.

MANCHESTER, ST. JOHN'S HOSPITAL OF MANCHESTER AND SALFORD FOR THE EAR AND EYE.—Honorary Assistant Aural Surgeon.

MANCHESTER, ST. MARY'S HOSPITALS FOR WOMEN AND CHILDREN.—House Surgeon. Salary at rate of £50 per annum, with board and residence.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C.—Honorary Dental Surgeon.

NAVY MEDICAL DEPARTMENT.—Six Dental Surgeons for duty with Naval Forces in the United Kingdom. Salary £1 per diem.

NEW HOSPITAL FOR WOMEN, Euston-road.—Female Senior Assistant for Out-patient Deparment. Also Clinical Assistant.

NORTHAMPTON, ST. ANDREW'S HOSPITAL FOR MENTAL DISEASES.—Resident Medical Superintendent. Salary £1200 per annum, with unfurnished residence, &c.

NOTTINGHAM CITY ASYLUM.—Second Assistant Medical Officer, unmarried. Salary £200 per annum, with board, apartments, and laundry.

NOTTINGHAM GENERAL DISPENSARY.—Assistant Resident Surgeon. Salary £170. Also Resident and Assistant Resident Surgeons for Branch. Salaries £180 and £170 per annum respectively, with apartments, attendance, light, and fuel.

NOTTINGHAM WORKHOUSE INFIRMARY.—Assistant Resident Medical Officer, unmarried. Salary £150 per annum, with apartments, board, washing, and attendance.

OXFORD COUNTY ASYLUM, Littlemore, near Oxford.—Junior Assistant Medical Officer. Salary £150 per annum, with apartments, board, and washing.

OXFORD, RADCLIFFE INFIRMARY AND COUNTY HOSPITAL.—Casualty House Surgeon, also House Surgeon, both unmarried, each for six months. Salary in each case at rate of £80 per annum, with board, &c.

PRINCE OF WALES'S GENERAL HOSPITAL, Tottenham.—Junior House Physician and Assistant Pathologist. Salary £60 per annum, with residence, board, and laundry.

READING, ROYAL BERKSHIRE HOSPITAL.—Medical Registrar.

ROCHDALE INFIRMARY.—Senior House Surgeon, unmarried. Salary £100 per annum, with board, residence, and laundry. Also Junior House Surgeon, unmarried. Salary £80 per annum, with board, residence, and laundry.

ROYAL FREE HOSPITAL, Gray's Inn-road, W.C.—Female Junior Obstetric Assistant. Board, lodging, and washing, but no salary.

ROYAL INSTITUTE OF PUBLIC HEALTH.—Demonstrator of Bacteriology and Comparative Pathology. Salary £250 per annum.

ROYAL LONDON OPHTHALMIC HOSPITAL, City-road, E.C.—Senior House Surgeon. Salary at rate of £100 per annum, with board and residence.

ROYAL NATIONAL ORTHOPÆDIC HOSPITAL.—Second Resident House Surgeon, unmarried, for six months. Salary at rate of £100 per annum.

ROYAL NAVAL MEDICAL SERVICE.—Twenty-five appointments.

ST. ALBANS, HERTS COUNTY ASYLUM, Hill End.—Junior Assistant Medical Officer, unmarried. Salary £170 per annum, with board, lodging, and washing.

ST. PAUL'S HOSPITAL FOR SKIN AND GENITO-URINARY DISEASES, Red Lion-square, W.C.—Honorary Surgeon. Also Clinical Assistant.

SHEFFIELD UNION HOSPITAL, Firvale.—Resident Assistant Medical Officer, unmarried. Salary £120 per annum, with apartments and rations.

STAFFORD, COTON HILL MENTAL HOSPITAL.—Assistant Medical Officer, unmarried. Salary £170 per annum, with residence, board, and laundry.

STOCKPORT INFIRMARY.—Senior House Surgeon. Salary £120 per annum, with board, washing, and residence. Also Junior House Surgeon. Salary £80 per annum, with board, washing, and residence.

STROUD GENERAL HOSPITAL.—House Surgeon. Salary £100 per annum, with board, lodging, and washing.

SUNDERLAND, ROYAL INFIRMARY.—House Physician for six months. Salary £80 per annum, with board, residence, and laundry.

WALSALL AND DISTRICT HOSPITAL.—Assistant House Surgeon. Salary £90 per annum, with board, residence, and laundry.

WARWICKSHIRE COUNTY COUNCIL.—Assistant County Medical Officer of Health. Salary £250 per annum.

WESTON-SUPER-MARE, ROYAL WEST OF ENGLAND SANATORIUM.—Resident Secretary-Superintendent, unmarried. Salary £200 per annum, with board and laundry.

WISBECH, NORTH CAMBRIDGESHIRE HOSPITAL.—Resident Medical Officer. Salary £150 per annum, with unfurnished house, free of rent and rates.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—Pathologist and Bacteriologist. Salary £200 per annum.

YORK RETREAT, HOSPITAL FOR THE TREATMENT OF MENTAL DISEASES.—Female Junior Assistant Resident Medical Officer. Salary £175 per annum, with board, lodging, and laundry.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies as Certifying Surgeons under the Factory and Workshop Acts at Burton Latimer, in the county of Northampton; and at Hatherleigh, in the county of Devon.

# Births, Marriages, and Deaths.

## BIRTHS.

CORFIELD.—On Jan. 26th, at Beechwood, Upper Tooting, S.W., Beatrice, the wife of Carruthers Corfield, M.R.C.S. Eng., L.R.C.P. and L.S.A. Lond., of a daughter.

HORNER.—On Jan. 31st, the wife of Norman Gerald Horner, M.B., of a son.

HUGHES.—On Feb. 2nd, at Queen Anne-street, Cavendish-square, W., the wife of E. C. Hughes, M.A., M.C. Cantab., F.R.C.S. Eng., of a daughter.

WILSON.—On Jan. 29th, at Tressillian-crescent, Brockley, S.E., the wife of F. Ernest Wilson, M.R.C.S. Eng., of a daughter.

## MARRIAGES.

MORRISTON DAVIES—COURTNEY.—On Jan. 31st, H. Morriston Davies, M.D., M.C. Cantab., F.R.C.S., son of Dr. W. Morriston Davies, to Dorothy, daughter of W. L. Courtney, Esq.

## DEATHS.

BURNEY.—On Jan. 31st, Walter Charles Skardon Burney, L.R.C.S. Irel., L.K.Q.C.P., aged 64 years.

CARTER.—On Jan. 28th, at Liverpool, William Carter, M.D., F.R.C.P., in his 78th year.

LONGWORTH.—On Feb. 3rd, at the Suffolk District Asylum, Melton, Stephen George Longworth, L.R.C.P. Irel., aged 36 years.

SYKES.—On Jan. 28th, at a nursing home, J. F. J. Sykes, M.D., D.Sc., Medical Officer of Health, St. Pancras, in his 60th year.

*N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.*

## BOOKS, ETC., RECEIVED.

ARNOLD, EDWARD, London.

Glycosuria and Allied Conditions. By P. J. Cammidge, M.D. Lond. Price 16s. net.

Human Embryology and Morphology. By Arthur Keith, M.D., LL.D. Aberdeen, F.R.C.S. Eng., Conservator of the Museum and Hunterian Professor, Royal College of Surgeons, England. Third edition, revised and enlarged. Price 15s. net.

BALE (JOHN), SONS, AND DANIELSSON, LIMITED, London.

The Etiology of Endemic Goitre, being the Milroy Lectures, delivered at the Royal College of Physicians of London in January, 1913. By Robert McCarrison, M.D. R.U.I., M.R.C.P. Lond., Major, Indian Medical Service. Price 10s. 6d. net.

A Clinical System of Tuberculosis. Describing all Forms of the Disease. By Dr. B. Bandelier, Medical Director to the Sanatorium Schwarzwaldheim at Schömberg, near Wildbad; and Dr. O. Roepke, Medical Director to the Sanatorium for Railway Workers at Stadtwald in Melsungen, near Cassel. Translated from the Second German Edition by G. Bertram Hunt, M.D., B.S., late Physician to the Scarborough Hospital. Price 21s. net.

BUTTERWORTH AND CO., Bell Yard, Temple Bar, London.

The National Insurance Act, 1911. By Orme Clarke, of the Inner Temple and Western Circuit, Barrister-at-Law. With an Introduction by Sir John Simon, K.C.V.O., M.P., Solicitor-General. Second edition. Price 12s. 6d.

CASSELL AND COMPANY, LIMITED, London, New York, Toronto, and Melbourne.

Diseases of Women. A Clinical Guide to their Diagnosis and Treatment. By George Ernest Herman, M.D., F.R.C.P. Lond., F.R.C.S. Eng., Consulting Obstetric Physician to the London Hospital. Enlarged edition, revised by the Author, assisted by R. Drummond Maxwell, M.D. Lond., F.R.C.S. Eng., Assistant Obstetric Physician to the London Hospital. Price 25s.

CHURCHILL, J. AND A., London.

Practice and Problem in Abdominal Surgery. By A. Ernest Maylard, B.S. Lond., Surgeon to the Victoria Infirmary, Glasgow. Price 8s. 6d. net.

FORDHAM UNIVERSITY PRESS, New York.

Modern Progress and History. Addresses on Various Academic Occasions. By James J. Walsh, K.C.St.G., M.D., Ph.D., LL.D., Litt.D. (Georgetown), Sc.D. (Notre Dame), Dean and Professor of the History of Medicine and of Functional Nervous Diseases at Fordham University School of Medicine. Price $2.00 net.

# Notes, Short Comments, and Answers to Correspondents.

## HEALTH OF MAURITIUS.

ACCORDING to the Blue Book for 1911, a report on which was not presented to Parliament until last month, the resident population of Mauritius and the adjacent islands, exclusive of the population of the dependencies, of the military in barracks, and of foreign shipping, was on March 31st, 1911, 368,791—194,095 males and 174,696 females. The population in barracks was returned as 1602, and the population of the "Dependencies" (Rodrigues, and a large number of smaller islands, of which the nearest is 230 miles, and the most remote about 1200 miles distant from Mauritius) amounted to 6690, bringing the total up to 377,083. There were 13,326 births registered during the year. The law allows a delay of 45 days for free registration, and the number of births which were not registered owing to death intervening before registration was 1258. The total number of births was accordingly 14,584. The deaths registered numbered 12,204. The Director of the Medical and Health Department observes in his report for 1911: "The disease that caused most deaths was malaria—4313 deaths being attributed to this disease alone—i.e., more than one-third of the total. This figure is not reliable; 'la fièvre' is a common and easy diagnosis, and is the cause of death usually given when the registration is made by the friends of the deceased and without a certificate from a medical man. The next highest comes pneumonia, with 1186 deaths; then tuberculosis, 836; and debility (ankylostomiasis?), 809. Adding the deaths caused by these diseases, and subtracting their sum from the total deaths, we find that 58·5 per cent. of the people who die in Mauritius die from diseases that are now looked upon as preventable ones, and that with proper sanitary precautions it should be possible to reduce the death-rate of the island considerably. As I have said, the figures for malaria are not reliable, but considering the weakening of resisting power caused by repeated attacks of malaria, we may take it as certain that though many of the deaths recorded as due to malaria were not immediately due to that disease, the possibility is that they would not have occurred if the patient had not been weakened previously by several attacks of fever during his life." The following figures, however, appearing on the hospital returns, show that malaria is distinctly on the decrease:—Number of cases in 1907, 4272; 1908, 5071; 1909, 3929; 1910, 2338; 1911, 2117. Corresponding to the decrease in the cases of malaria treated in the hospitals there is a decrease in the number of cases of splenic hypertrophy, the figures for 1908, 1909, 1910, and 1911 being 1193, 886, 561, and 380 respectively. The spleen census and treatment of school children with quinine have been continued, and a number of minor antimalarial works have been carried out under the supervision of the officers of the sanitary branch of the Medical and Health Department.

There was a decrease in the cases of plague, the total during the year being 173 as compared with 731 in 1910. The number in 1911 is, with the exception of 1908 (when there were 167 cases), the lowest since the first outbreak in 1899. 131 cases were fatal, giving a death-rate of 75·7 per cent. The worst month of the year was January, when 86 cases were recorded; then 22 in February, 5 in March, and 6 in April. No case was reported after April 20th until June 2nd. The next was reported on August 27th, and from September to the end of the year there were 51 additional cases. There was a sharp outbreak in the town of Rose Hill between Nov. 18th and Dec. 11th, there being 19 cases, of which 13 proved fatal. An insanitary block of buildings in which the cases occurred was demolished, and there has been no subsequent case in the town. The number of children presented for vaccination at the public vaccine stations was 11,290; the percentage of successful vaccinations was 98·2. There are 13 hospitals, including five in connexion with the prisons and retormatory, and there is also a hospital ward with 30 beds attached to the lunatic asylum. The eight public hospitals have 947 beds. The total number of cases treated at all hospitals as indoor patients was 18,074, and as out-patients 6783. The number of cases treated at 27 dispensaries was 62,384. The mean rainfall in 1911 from 73 stations was 79·97 inches. A severe drought commenced in July, and persisted throughout the remainder of the year. The mean temperature of the air at the Observatory, Pamplemousses, was 72·8° F., as compared with an average of 73·4°, the highest temperature recorded being 92·3° on Dec. 2nd and 5th, and the lowest, 54·8°, on June 11th and 12th.

## THE POETRY REVIEW.

THE *Poetry Review*, published by the Poetry Society, Surrey-street, London, price 6*d.* monthly, is edited by Stephen Phillips—a fact which suggests that its contents should be of good quality and selected with literary discrimination. The second number of Vol. II. (February, 1913) has been sent to us, and we are glad to note that the medical profession is represented in it by a thoughtful article on the Melody of Moore, by Dr. H. Macnaughton Jones, who emphasises the Irish bard's double gift of melody and power of illustration by contrasts. Among several other interesting articles may be mentioned the Optimism of Shakespeare, by the Editor; a poetic interlude, "A Dance of Death," by Mr. Hamilton Moore; an Essay on Australian Verse, by Mr. William Moore; and an admirable appreciation by Harold Butterworth of the Nobel prizeman, Frédéric Mistral, the peasant Provençal troubadour, with a striking portrait by P. E. Rixens. The *Poetry Review* is the organ of the Poetry Society, which aims at encouraging the appreciation of poetry by its intelligent reading, study, and discussion.

## OLD AGE AND RECUPERATIVE POWER.

*To the Editor of* THE LANCET.

SIR,—E. I., born in April, 1815, two months before the battle of Waterloo, on July 30th, 1912, fell down stairs. In doing so she sustained a fracture of the neck of the right femur. This was put up with sandbags and an extension with 4 lb. weight attached. There was at first 1½ inches shortening; on extension this came down to ½ inch. At the present time, January, 1913, she can stand alone, and walk round the room three or four times with the assistance of one arm and a stick.

Her sight has failed since the accident and her hearing has been dull for some time, but she enjoys her food and enters into general conversation. At the age of 97 years such a result seems worthy of record.

I am, Sir, yours faithfully,

Malton, Jan. 30th, 1913. W. VERNON SHAW.

## A POCKET-BOOK FOR INSURANCE DOCTORS.

WE have received from Robert Gibson and Sons, Limited, of Glasgow, a copy of the Medical Practitioner's Pocket Day Book, price 7*d.* It is ruled for name and address of patient, society, and number, the 31 days of the month, columns for the total number of various kinds of services, such as ordinary, special, and night visits, of attendances, operations, and so forth, age and sex, occupation, and nature of the disease. In it the details of Insurance Act work can be easily noted down and transferred at leisure to the official account books. It would be equally useful in private practice. Each page is ruled for 17 names, and shows a month at an opening, but two or more pages can be used in continuance for a month if necessary.

THE honorary secretary of the Charing Cross Hospital annual dance requests us to announce that this will be held at the Empress Rooms, Royal Palace Hotel, Kensington, on Thursday, Feb. 13th, and former students who wish to be present should communicate with him at the hospital. Tickets 8*s.* 6*d.* each.

*T. H. K.*—We cannot trace the paragraph about which our correspondent inquires.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

## A DIARY OF CONGRESSES.

WE shall publish this diary from time to time that our readers may have under their hands the dates of the approaching scientific Congresses. It is unnecessary to issue the lists of all these functions week by week, and we propose to make only such gatherings as will occur in the immediate future the subject of regular announcement. The following Congresses, Conferences, and Exhibitions are announced:—

Feb. 14th–22nd (London, Olympia).—Aero Exhibition.
March 1st (University of London).—Eugenics Education Conference.
,, 17th–20th (Paris).—International Congress of Physical Education.
(Easter week) (Berlin).—Fourth International Congress for Physiotherapy.
March 25th (Berlin).—Twelfth Congress of the German Association for Orthopædic Surgery.
,, 26th–29th (Berlin).—Forty-second Congress of the German Surgical Association.
April 3rd–9th (London).—International Congress of Historical Studies.
,, 6th–12th.—Health Week.
,, 22nd–25th (London, Horticultural Hall).—Nursing Conference and Exhibition.
,, 26th (Ghent) (opens).—International Exhibition.

**The following journals, magazines, &c., have been received:**—Middlesex Hospital Journal, Public Health, Revue d'Hygiène, Edinburgh Medical Journal, Homœopathic Recorder, St. Bartholomew's Hospital Journal, Bulletin of the Naval Medical Association of Japan, Nordiskt Medicinskt Arkiv, Proceedings of the Royal Society of Medicine, Archives of the Roentgen Ray, La Policlinique, Jahrbuch für Kinderheilkunde, Clinique Infantile, Medical Chronicle, Indian Ambulance Gazette, Polyclinic, Tropical Diseases Bulletin, Review of Neurology and Psychiatry, Therapeutic Gazette, Archives Générales de Médecine, Journal of Nervous and Mental Disease, Journal of the Royal Sanitary Institute, South African Medical Record, Medico-Surgical Journal of the Tropics, &c.

# Medical Diary for the ensuing Week.

## SOCIETIES.

**ROYAL SOCIETY**, Burlington House, London, W.

THURSDAY.—Prof. R. A. Sampson: On a Cassegrain Reflector with Corrected Field.—Prof. H. E. Armstrong and Dr. J. V. Eyre: Studies of the Processes Operative in Solutions. XXV., The Influence of Non-electrolytes on Solubility. The Nature of the Processes of Dissolution and Precipitation.—Mr. E. E. Walker: Studies of the Processes Operative in Solutions. XXVI., The Disturbance of the Equilibrium in Solutions of Fructose by Salts and by Non-electrolytes (communicated by Prof. H. E. Armstrong).—Mr. J. Chadwick and Mr. A. S. Russell: The Excitation of $\gamma$ Rays by the $\beta$ Rays of Ionium and Radiothorium (communicated by Prof. E. Rutherford).

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**ROYAL SOCIETY OF MEDICINE**, 1, Wimpole-street, W.

TUESDAY.

SECTION OF SURGERY (Hon. Secretaries—James Berry, J. Murray), at 1, Wimpole-street, W.: at 5.30 P.M.

Dr. Arthur F. Hertz: The Cause and Treatment of Certain Unfavourable After-effects of Gastro-enterostomy.

Mr. Edred M. Corner: Inferences on Modern Treatment drawn from Histories of Patients who have Recovered from Perforation of a Gastric or Duodenal Ulcer.

FRIDAY.

SECTION OF CLINICAL MEDICINE (Hon. Secretaries—Charles H. Fagge, W. Essex Wynter), at 1, Wimpole-street, W.: at 8 P.M.

*Discussion*

On Cervical Rib, particularly the Results of Operative Treatment.

Dr. F. Wood Jones: Anatomical Demonstration.
Mr. W. Thorburn: Surgical Treatment.
Mr. Percy Sargent: Results of Operation.
Dr. S. A. K. Wilson: Symptomatology.

Cases will be arranged to illustrate:—
(1) Results of Removal of Rib.
(2) Neuro-muscular Features.
(3) Vascular Features.

Sir StClair Thomson: (1) Intrinsic Cancer of the Larynx in a Woman: Laryngo-fissure Case in which Complete Extirpation of the Growth was apparently effected through the Mouth; (2) Lateral Rhinostomy or Moure's Operation: Case to illustrate the great Advantage of this Operation in Malignant Disease of the Nose and Accessory Sinuses.

Dr. Hale White: Retinal Hæmorrhages in Secondary Anæmia.

Dr. F. Parkes Weber: (1) Thoracic Aneurysm in a Woman; (2) Nephritis in Secondary Syphilis (Result); (3) Intermittent Claudication (Arthritis Obliterans).

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**MEDICAL SOCIETY OF LONDON**, 11, Chandos-street, Cavendish-square, W.

MONDAY.—8.30 P.M., Discussion on Early Operation in Appendicitis (opened by Mr. E. Owen). The following gentlemen will take part in the discussion:—Mr. W. H. Battle, Mr. C. P. Childe, Sir George Beatson, Mr. A. M. Connell (Sheffield), Mr. J. G. Turner, and Mr. C. Renton.

**PHARMACEUTICAL SOCIETY OF GREAT BRITAIN**, Lecture Theatre of the Society, 17, Bloomsbury-square, W.C.

TUESDAY.—8 P.M., Papers:—Mr. E. H. Farr and Mr. R. Wright: Note on Standardised Powdered Extract of Aconite.—Mr. E. F. Harrison and Mr. P. A. W. Self: The "Lead Number" as a Test for Asafetida.

**UNITED SERVICES MEDICAL SOCIETY**, Royal Army Medical College, Grosvenor-road, S.W.

WEDNESDAY.—5 P.M., Major J. Oldfield, R.A.M.C. (T.): Regimental and Field Ambulance Training.

**HUNTERIAN SOCIETY**, St. Bartholomew's Hospital, E.C.

WEDNESDAY.—8.30 P.M., Council Meeting. 9 P.M., Annual Oration:—Dr. E. W. Goodall: Serum Sickness.

**CHILD STUDY SOCIETY, LONDON**, Royal Sanitary Institute, 90, Buckingham Palace-road, S.W.

THURSDAY.—7.30 P.M., Dr. J. Kerr: Brain Mechanisms and Handwriting.

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## LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

**ROYAL COLLEGE OF SURGEONS OF ENGLAND**, Lincoln's Inn Fields, W.C.

MONDAY.—5 P.M., Prof. J. E. Adams: Peritoneal Adhesions (An Experimental Study). (Hunterian Lecture.)

FRIDAY.—4 P.M., Sir Rickman J. Godlee, Bart.: Hunterian Oration.

**MEDICAL GRADUATES' COLLEGE AND POLYCLINIC**, 22, Chenies-street, W.C.

MONDAY.—4 P.M., Dr. J. M. H. MacLeod: Clinique (Skin). 5.15 P.M., Lecture:—Dr. F. J. McCann: Some Common Mistakes in the Treatment of the Diseases of Women.

TUESDAY.—4 P.M., Dr. P. Stewart: Clinique (Medical). 5.15 P.M., Lecture:—Sir George H. Savage: Automatism.

WEDNESDAY.—4 P.M., Mr. D. C. L. Fitzwilliams: Clinique (Surgical). 5.15 P.M., Lecture:—Mr. F. L. Golla: Some Points in the Localisation of Cerebral Tumours.

THURSDAY.—4 P.M., Dr. G. Rankin: Clinique (Medical). 5.15 P.M., Lecture:—Dr. J. F. H. Dally: Heart Disorders and the Gastro-intestinal Tract.

FRIDAY.—4 P.M., Mr. J. G. French: Clinique (Ear, Nose, and Throat). 5.15 P.M., Lecture:—Dr. W. Wingrave: Discharges.

**POST-GRADUATE COLLEGE**, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Dr. Simson: Diseases of Women. 10.30 A.M., Medical Registrar: Demonstration of Cases in Wards. 12 noon, Dr. Bernstein: Pathological Demonstration. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Mr. Dunn: Diseases of the Eye. 5 P.M., Lecture:—Mr. Armour: Whitlow, Surgical Anatomy and Treatment.

TUESDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 10.30 A.M., Surgical Registrar: Demonstration of Cases in Wards. 12 noon, Mr. T. Gray: Demonstration of Fractures. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Diseases of the Skin. 5 P.M., Lecture:—Dr. Pritchard: Clinical Pathology.

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 11 A.M., Mr. Souttar: Demonstration of Minor Operations. 12 noon, Mr. Souttar: Abdominal Diagnosis. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Mr. B. Harman: Diseases of the Eye. Dr. Simson: Diseases of Women. 5 P.M., Lecture:—Dr. Beddard: Practical Medicine.

THURSDAY.—10.30 A.M., Dr. Simson: Gynæcological Demonstration. 12.15 P.M., Lecture:—Dr. G. Stewart: Neurological Cases. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Mr. Dunn: Diseases of the Eye. 5 P.M., Lecture:—Mr. Baldwin: Practical Surgery.

FRIDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 10.30 A.M., Lecture:—Dr. Owen: Practical Medicine. 12.15 P.M., Lecture:—Dr. Bernstein: Clinical Pathology. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Diseases of the Skin. 5 P.M., Lecture:—Dr. Abraham: Cases of Skin Disease.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Diseases of the Eye. 10.30 A.M., Surgical Registrar: Demonstration of Cases in Wards. 12 noon, Mr. Souttar: Surgical Anatomy of the Abdomen. 2 P.M., Medical and Surgical Clinics. X Rays. Operations.

**LONDON SCHOOL OF CLINICAL MEDICINE**, Dreadnought Hospital, Greenwich.

MONDAY.—Out-patient Demonstrations:—10 A.M. Dr. G. Holmes: Medical. Mr. H. Curtis: Surgical. 12 noon, Mr. G. N. Biggs: Throat, Nose, and Ear.—2.15 P.M., Mr. W. Turner: Surgery. 3 P.M., Mr. W. Turner: Operations. 3.15 P.M., Sir Dyce Duckworth: Medicine. 4.15 P.M., Mr. R. Lake: Ear and Throat.

TUESDAY.—Out-patient Demonstrations:—10 A.M., Dr. C. Singer: Medical. Mr. A. J. Walton: Surgical. 12 noon, Dr. H. MacCormac: Skin.—2 P.M., Mr. L. McGavin: Operations. 2.15 P.M., Mr. R. Carling: Surgery. 3.15 P.M., Dr. G. Rankin: Medicine.

WEDNESDAY.—Out-patient Demonstrations: 10 A.M., Dr. F. Langmead: Medical. Mr. P. Cole: Surgical. 11 A.M., Mr. R. E. Bickerton: Eye.—2 P.M., Mr. L. V. Cargill or Mr. Choyce: Operations. 2.15 P.M., Dr. F. Taylor: Medicine. 3.15 P.M., Mr. Cargill: Eye Clinique. 4.30 P.M., Mr. C. C. Choyce: Surgery.

THURSDAY.—Out-patient Demonstrations:—10 A.M., Dr. G. Holmes: Medical. Mr. H. Curtis: Surgical. 12 noon, Mr. G. N. Biggs: Throat, Nose, and Ear.—2 P.M., Mr. R. Carling or Mr. W. Turner: Operations. Dr. A. Davies: Pathological Demonstration. 3.15 P.M., Dr. R. Wells: Medicine.

FRIDAY.—Out-patient Demonstrations;—10 A.M., Dr. C. Singer: Medical. Mr. A. J. Walton: Surgical. 12 noon, Dr. H. MacCormac: Skin.—2 P.M., Mr. L. McGavin: Operations. 2.15 P.M., Sir John Rose Bradford; Medicine. 3.15 P.M., Mr. L. McGavin: Surgery.

SATURDAY.—Out-patient Demonstrations: 10 A.M., Dr. F. Langmead: Medical. Mr. P. Cole: Surgical. 11 A.M., Mr. R. E. Bickerton: Eye.—10 A.M., Dr. W. Steuart: Radiography.

**NORTH-EAST LONDON POST-GRADUATE COLLEGE**, Prince of Wales's General Hospital, Tottenham, N.

MONDAY.—Clinics:—10.30 A.M., Surgical Out-patient (Mr. E. Gillespie). 2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Nose, Throat, and Ear (Mr. H. D. Gillies). 3 P.M., Clinical Pathology and Pathological Demonstration (Dr. W. H. Duncan).

TUESDAY.—Clinic; 2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld); Surgical (Mr. Howell Evans); Gynæcological (Dr. A. E. Giles). 3.30 P.M., Medical In-patient (Dr. A. J. Whiting). 4.30 P.M., Lecture:—Dr. A. J. Whiting: Recent Investigations in the Treatment of Heart Disease (illustrated by polygraphic tracings).

WEDNESDAY.—Clinics:—2 P.M., Throat Operations (Mr. Gillies). 2.30 P.M., Children's Out-patient (Dr. T. R. Whipham); Skin (Dr. G. N. Meachen); Eye (Mr. R. P. Brooks). 3 P.M., X Rays (Mr. W. Steuart); Clinical Pathology and Pathological Demonstration (Dr. W. H. Duncan). 5.30 P.M., Eye Operations (Mr. Brooks).

THURSDAY.—2.30 P.M., Gynæcological Operations (Dr. A. E. Giles). Clinics:—Medical Out-patient (Dr. A. J. Whiting); Surgical (Mr. Carson). 3 P.M., Medical In-patient (Dr. G. P. Chappel). 4.30 P.M., Lecture:—Dr. C. F. Hadfield: Ethyl Chloride Anæsthesia

FRIDAY.—2.30 P.M., Operations. Clinics:—Medical Out-patient (Dr. A. G. Auld); Surgical (Mr. E. Gillespie); Eye (Mr. R. P. Brooks). 3 P.M., Medical In-patient (Dr. R. M. Leslie); Clinical Pathology and Pathological Demonstration (Dr. W. A. Duncan).

**LISTER INSTITUTE OF PREVENTIVE MEDICINE**, Chelsea Bridge-road, S.W.

TUESDAY.—5 P.M., Dr. G. H. K. Macalister: Various Products of the Tubercle Bacillus used in Diagnosis and Treatment and Current Views upon their Mode of Action.

THURSDAY.—5 P.M., Dr. J. A. Arkwright: Some Recent Work on the Agglutination of Bacteria with Special Reference to Agglutination with Acids.

**HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton, S.W.**
WEDNESDAY.—4.30 P.M., Lecture:—Dr. D. Grant: The Diagnosis of Diseases simulating Laryngeal Tuberculosis.

**ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City-road, E.C.**
Course of Lecture-Demonstrations on Diseases of the Chest, with Special Reference to Tuberculosis (including a Tuberculin Course):—
MONDAY.—4.30 P.M., Dr. Ridge; 8 P.M., Dr. B. King. (Tuberculin Course.)
TUESDAY.—4.30 P.M., Dr. P. B. Ridge. (Tuberculin Course.)
WEDNESDAY.—4.30 P.M., Dr. S. Thompson. (Tuberculin Course.)
THURSDAY.—4.30 P.M., Dr. M. Leslie; 8 P.M., Dr. B. King. (Tuberculin Course.)
FRIDAY.—4.30 P.M., Dr. Phear. (Tuberculin Course.)
SATURDAY.—10.30 A.M., Dr. M. Leslie. (Tuberculin Course.)

**NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C.**
TUESDAY.—3.30 P.M., Clinical Lecture:—Dr. A. Turner: Sensory Conduction in the Spinal Cord.
FRIDAY.—3.30 P.M., Clinical Lecture:—Dr. A. Turner: Sensory Types of Disseminated Sclerosis.

**CANCER HOSPITAL, Museum of the Hospital, Fulham-road, S.W.**
WEDNESDAY.—5 P.M., Mr. C. Ryall: Cancer of the Tongue (illustrated by cases and microscopic and other specimens).

**ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, 49, Leicester-square, W.C.**
TUESDAY.—2 P.M., Dr. W. Griffith: The Pathology of the Skin. 6 P.M., Dr. W. K. Sibley: General Principle of Treatment of Diseases of the Skin.
THURSDAY.—6 P.M., Dr. M. Dockrell: Fungous Diseases of the Skin—I., Tinea Circinata; II., Tinea Imbricata; III., Tinea Versicolor; IV., Erythrasma; V., Actinomycosis; VI., Madura Foot.

**UNIVERSITY OF LONDON (KING'S COLLEGE), Physiological Laboratory, King's College, London, W.C.**
MONDAY.—4.30 P.M., Dr. O. Rosenheim: Recent Advances in Chemical Physiology and Pathology.

**LONDON HOSPITAL MEDICAL COLLEGE (UNIVERSITY OF LONDON), London Hospital, Mile End-road, E.**
Course of Lectures and Demonstration on Neurology (illustrated with Clinical Cases):—
MONDAY.—4.30 P.M., Dr. T. Thompson: Lesions of the Peripheral Nervous System and Spinal Cord.
TUESDAY.—4.30 P.M., Dr. Turnbull and Dr. G. Holmes: Pathology of the Central Nervous System.
WEDNESDAY.—4.30 P.M., Dr. G. Holmes: Clinical Anatomy and Regional Diagnosis.
FRIDAY.—4.30 P.M., Dr. H. Head: Common Diseases of the Nervous System.

**UNIVERSITY OF LONDON (UNIVERSITY COLLEGE), The Francis Galton Laboratory for National Eugenics.**
TUESDAY.—8 P.M., Prof. K. Pearson: Heredity, Environment and Parental Habits in their Relation to Infant Welfare. (Lecture I.)

**ROYAL SANITARY INSTITUTE, 90, Buckingham Palace-road, S.W.**
FRIDAY.—8.15 P.M., Mr. H. P. Boulnois: Hygiene of the Home (illustrated by lantern slides). (Chadwick Trust Lecture.)

**ROYAL INSTITUTION OF GREAT BRITAIN, Albemarle-street, Piccadilly, W.**
TUESDAY.—3 P.M., Prof. W. Bateson: The Heredity of Sex and some Cognate Problems. (Lecture V.)
FRIDAY.—9 P.M., Prof. A. Gray; New Gyroscopes and their Applications.
SATURDAY.—3 P.M., Prof. Sir J. J. Thomson, O.M.: The Properties and Constitution of the Atom. (Lecture II.)

**ANCOATS HOSPITAL, Manchester.**
THURSDAY.—4.15 P.M., Dr. C. H. Melland: Diabetes. (Post-Graduate Clinic.)

**MANCHESTER ROYAL INFIRMARY.**
TUESDAY.—4.30 P.M., Dr. C. Moore: Diet in Diseases of the Stomach. (Post-Graduate Clinic.)
FRIDAY.—4.30 P.M., Mr. Telford: Some Examples of Calculous Disease. (Post-Graduate Clinic.)

*For further particulars of the above Lectures, &c., see Advertisement Pages.*

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### THE INDEX TO THE LANCET.

THE Index and Title-page to Vol. II. of 1912 were given in THE LANCET of Dec. 28th, 1912.

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*(Taken daily at 8.30 a.m. by Steward's Instruments.)*

THE LANCET Office, Feb. 5th, 1913.

| Date. | Barometer reduced to Sea Level and 32° F. | Direction of Wind. | Rainfall. | Solar Radiation in Vacuo. | Maximum Temp. in Shade. | Min. Temp. | Wet Bulb. | Dry Bulb. | Remarks. |
|---|---|---|---|---|---|---|---|---|---|
| Jan. 30 | 29·81 | S.W. | 0·05 | 51 | 51 | 43 | 45 | 45 | Overcast |
| ,, 31 | 29·38 | N.W. | 0·19 | 69 | 45 | 40 | 39 | 40 | Fine |
| Feb. 1 | 29·73 | S.W. | ... | 48 | 45 | 39 | 39 | 40 | Overcast |
| ,, 2 | 29·77 | W. | 0·20 | 61 | 49 | 35 | 36 | 39 | Fine |
| ,, 3 | 30·01 | S.W. | 0·17 | 60 | 53 | 39 | 47 | 49 | Cloudy |
| ,, 4 | 30·22 | W. | ... | 78 | 56 | 48 | 46 | 49 | Fine |
| ,, 5 | 30·12 | S.W. | ... | 54 | 50 | 47 | 46 | 48 | Overcast |

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